

CIO

WebBusiness

Section Two • June 1, 1998
 154 Pages In Two Sections



CHOOSING A WEB CONSULTANT

7 HOT TIPS

For Creating The Short List

Office Depot Online Vice President
 Beth VanStory looked for someone
 who understood Net culture

Page 38

FYI

FROM: _____

Attached is a copy of **CIO Web Business**.
 The articles take a cross-functional look
 at leveraging the Web to add enterprise
 value. Thought you might be interested...

TO: _____

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WebBusiness

VOL. 11 • NO. 16 • JUNE 1, 1998 • 154 PAGES IN 2 SECTIONS
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ART AND TECHNOLOGY At the world's great museums, guardians of the past are meeting the technology of the future. *By Anne Stuart*

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VALUE-ADDED PROPOSITIONS Building home-grown Web tools isn't a walk in the park, but marketing them successfully can be even tougher. *By Debby Young*

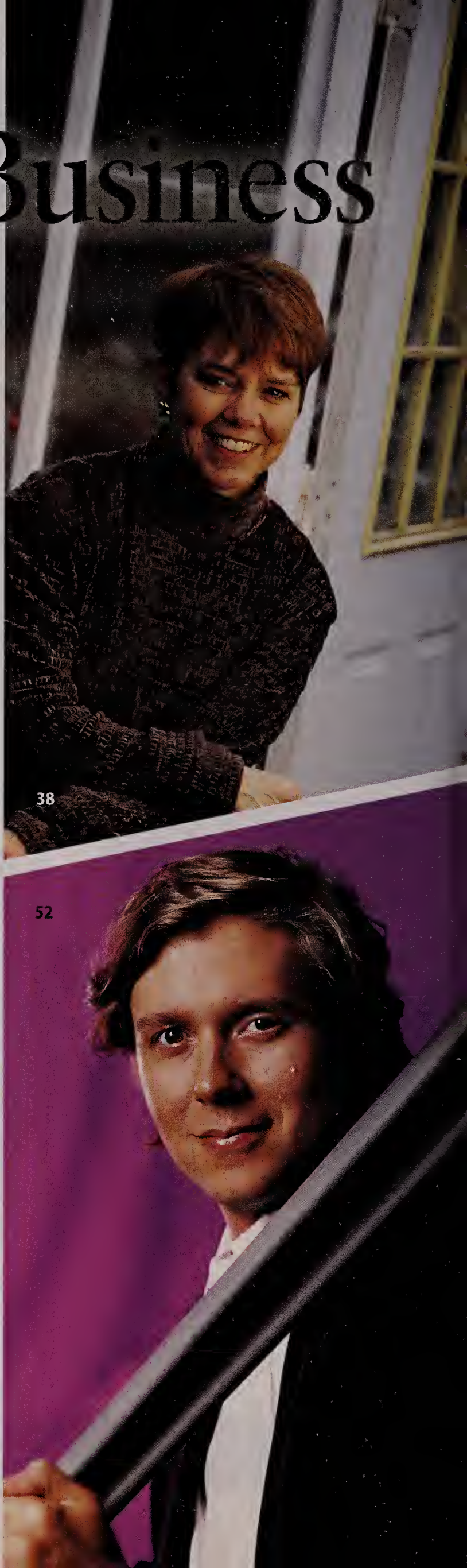
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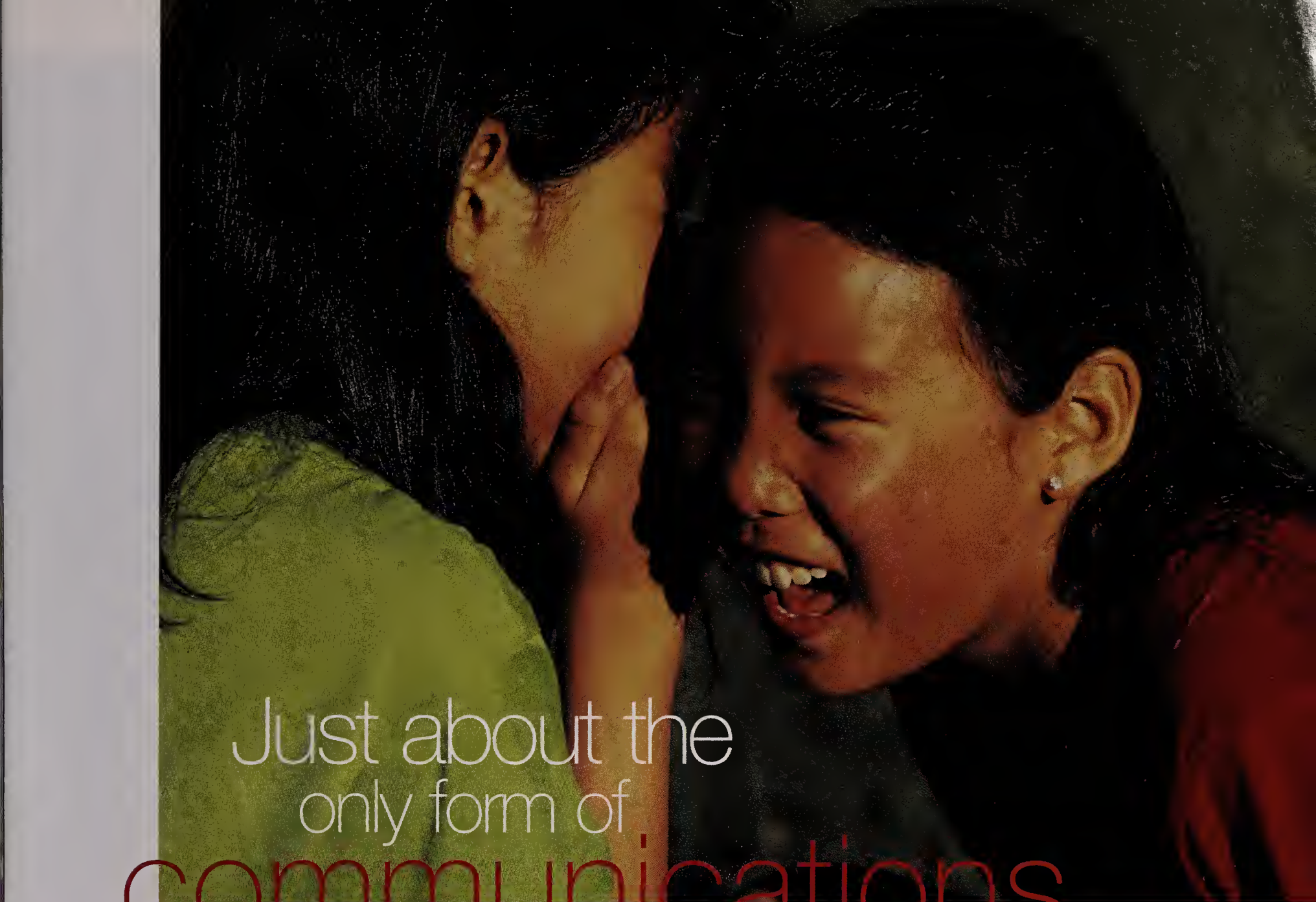
Planning ensures a
well-stocked
Web site.



*Beth VanStory,
Vice President,
Office Depot
Online*

*Cover photo by
Kent Hanson*



A close-up photograph of two women with dark hair. The woman on the left is wearing a green top and is whispering into the ear of the woman on the right, who is wearing a dark top and has a joyful expression. The background is dark and out of focus.

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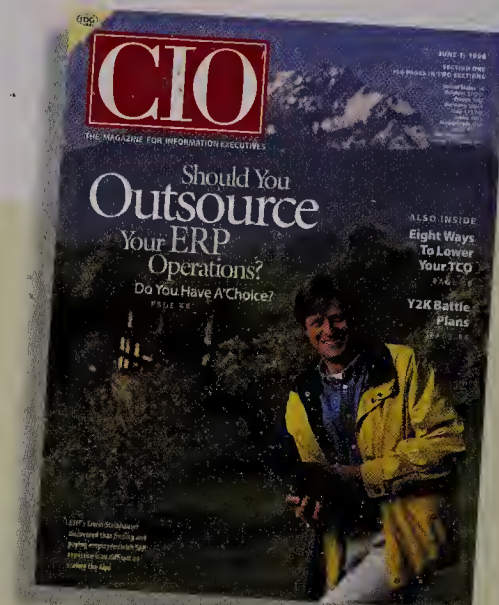
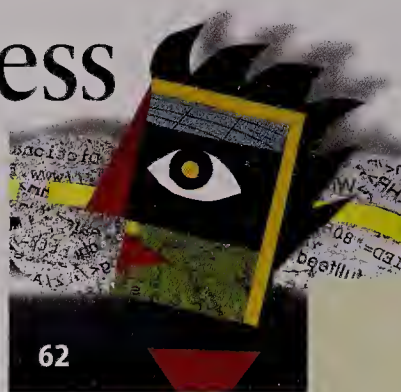
INTERNETWORKING
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Inside Section 1

COVER STORY: OUTSOURCING ERP

Handing your most strategic enterprise system off to an outsourcer means making crucial decisions.

THE CIO ROLE Freshman year brings change and challenges to new CIOs.

TOTAL COST OF OWNERSHIP Managing infrastructure costs has joined other hot action items on the CIO's growing list of concerns. Make sure your total cost of ownership is right for your business.

THINK TANK Although many companies are using customer data, few are turning it into knowledge. What's the problem?

YEAR 2000 CHALLENGE Attacking the millennium bug calls for a prudent battle plan.

EMERGING TECHNOLOGY What the next version of Windows brings may not be enough to justify the cost.

SHOP TALK Goodyear's Debra Walker on leveraging business-side experience in IS.



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Fusion, Not Confusion

WE NOTED A TREND IN JUDGING THE ENTRIES TO 1998's CIO Web Business 50/50 Awards (you'll have to wait until July's Special Issue for full awards coverage): Namely, intranets are converging with Internet and extranet sites, creating the possibility of one enterprise "uberNet" comprising all aspects of the business operating system.

For example, Toshiba America Information Systems' Electronic Imaging Division (EID), a maker of fax machines and copiers, interacts with employees, dealers and distributors over Internet FYI, bundling in one tent the company's business-to-business e-commerce, transaction processing and internal information sharing. And Progress Software Corp., a vendor of Web and client/server application-development tools, operates a hybrid of intranet, extranet and public Internet supporting the company's complex geographically dispersed channels and customer relationships.

This trend features a number of fascinating aspects. Among them is the potential

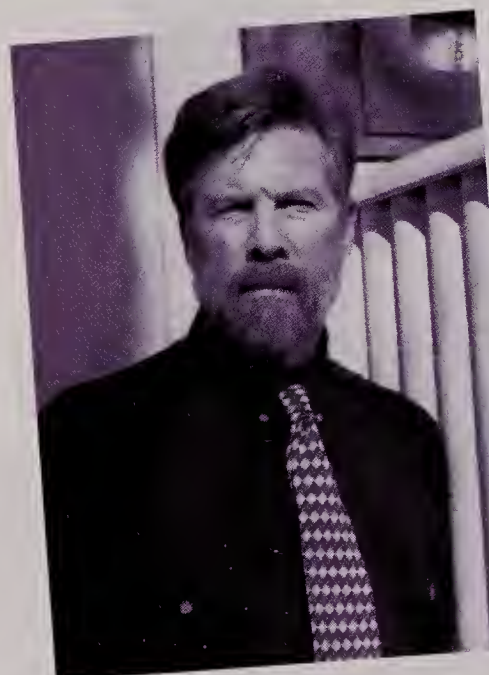
to have a single well-regulated utility that serves all the computational, transactional and informational needs of employees, trading partners and end customers. This vision—rather than the notion of dazzlingly cheap desktop boxes—animates enthusiasm (among CIOs especially) for the network-computing concept. (Sun Microsystems Inc., whose slogan is "the network is the computer," has championed the Java-powered "Webtop" model, holding out the promise of ease of administration and ubiquitous user access at a vastly reduced cost profile.)

The idea that one ocean of info and capabilities can be achieved in a scalable, maintainable way is, frankly, irresistible. Despite what I imagine to be limited implementations within Sun itself, this is neither an imminent nor perhaps even a midterm attainable goal. But it will inevitably occur. And since we have been chronically conservative in our predictions to date, sooner is the safer bet.

Is your business planning for this? Should the leaders of Web development chart the migration path for convergence? Or is there no consensus that convergence is an end point toward which all businesses should strive? If not, are there ways to identify whether a convergence strategy makes sense for your business? And if it does, what barriers (technical, political, organizational, infrastructural) need to be overcome? Will near-term platform choices help or hinder convergence? (What, for example, are the implications of the penetration of Windows NT into large enterprises?)

I don't know the answers, but I know many enterprises will pursue a convergent strategy—whether through a carefully planned design or in an unplanned, reactive way. But it is beginning to happen. On the theory that planning is better than accident, leaders of enterprise Web development ought to address the questions head-on.

So what'll it be? One Net, under Java, indivisible, with liberty and flexibility for all? Or something else entirely? Let us know whether you are converging. And stay tuned for the CIO Web Business 50/50 Awards Special Issue next month.



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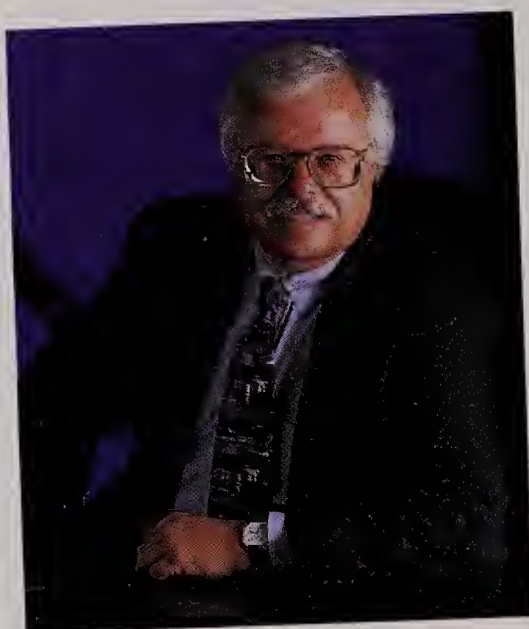
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A Digital Economy

DURING THE PAST SEVERAL YEARS, THE UNITED STATES ECONOMY HAS performed beyond most expectations, including my own. The shrinking federal budget deficit, a stable economic environment, low interest rates, expanding international trade with fewer barriers and more effective private sector management are all playing a role in this robust economic performance.

Many observers are starting to believe what you and I have known for years: Advances in information technology (IT), driven by the growth of the Internet, have contributed impressively to creating this dynamic economy.



Consider that Yahoo Inc., with 1997 revenues of \$67 million, has a current market value of approximately \$5 billion.

Recently, even Federal Reserve Board Chairman Alan Greenspan, in his testimony to Congress, noted, "...our nation has been experiencing a higher growth rate of productivity—output per hour worked—in recent years. The dramatic improvements in computing power and communication and information technology appear to have been a major force behind this beneficial trend."

Some economists suggest that IT advances will create a "long boom" that will take the economy to new

heights over the next 25 years. IT industries have been growing at more than double the rate of the overall economy—a trend that will likely continue. Investments in IT now represent over 45 percent of all business equipment investments. Declining prices for IT products have lowered overall inflation.

Businesses in virtually every segment of the economy are conducting business using the Internet: They are cutting the cost of purchasing, managing supplier relationships, streamlining logistics and inventory, planning production and reaching new and existing customers more effectively.

What are you doing in your organization to harness the power of the Internet? Now is the time to get on board, before the competition passes you by. As always, your comments and opinions are most appreciated.

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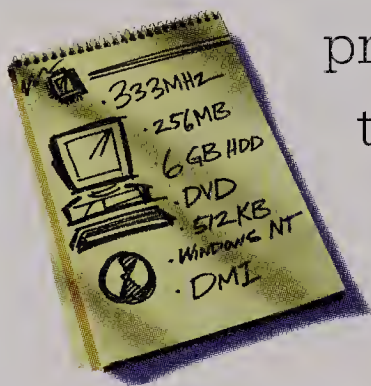
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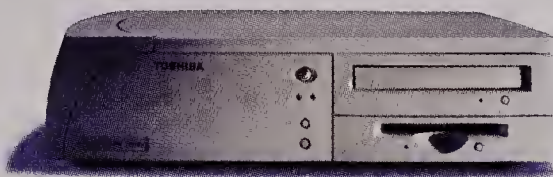
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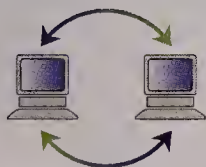
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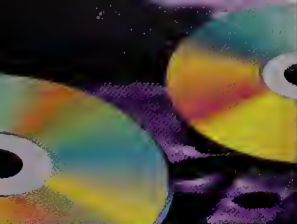
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In Touch with Tomorrow

TOSHIBA



THREADS

County Line

BEFORE HAMILTON COUNTY, Ohio, opened its virtual courthouse, the regional real estate trade spent thousands of hours each year tracking down property records. Agents, appraisers, lawyers and others could view tax and appraisal documents only in person at a county building in Cincinnati—up to 30 miles away for some. And of course research was limited to weekday business hours.

Now an automated record-searching system lets Web users compile the same information without leaving their offices or homes. And they can do the job anytime.

"We've got 'em dialing in at 3 a.m.," says County Auditor Dusty Rhodes, who oversees both physical and virtual records for Hamilton County's 325,000 business and residential properties.

Launched in January 1998, the virtual courthouse (www.hamiltoncountyauditor.org) attracts an average of 225 users daily. Searching by owner's name, address or parcel number, visitors can view records on any property's appraised value, tax history or building characteristics. They can also

access a property sketch and soon a photo.

The county also benefits. Rhodes says while it's too early to attribute specific cost reductions to the virtual courthouse, it's part of a package of computerized improvements that overall save the county at least \$1 million a year.

—Anne Stuart

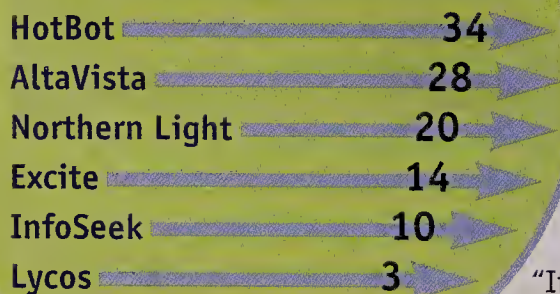


Less Is More

Once upon a time, Web users believed that search engines searched the entire Web. That's not exactly the way it works. In fact, it's not even close. A recent study by NEC Corp.'s research lab in Princeton, N.J., found that the greatest percentage of the Web searched by any engine was 34. That engine was HotBot. One popular engine, Lycos, searched only 3 percent of the Web.

Who Searches What

Percent of Web searched by



SOURCE: NEC RESEARCH INSTITUTE

Rajive Mathur, senior product manager at Lycos, claims that his search engine covers much more than 3 percent of the Web but is reluctant to put a number on the percentage searched. "Our goal is to look at what users are looking at and give them that," says Mathur. "We have an editorial group and a technological group working to decide which answers are relevant. Why should we give people more results? Our studies show that 93 percent of the people want fewer results, and 85 percent never go beyond the third page of results."

Steve Lawrence, who worked on the NEC study, agrees that it often makes more sense to search pages that are fewer in number but more relevant.

"The smaller indexes are biased toward more popular pages," says Lawrence. "If what you are looking for is in most of the engines, it may be harder to find in a larger engine."

—Art Jahnke

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Unsafe Sex

Employees at the brokerage subsidiary of Salomon Smith Barney were reminded recently that office networks are just that, office networks, not private property of employees. The reminder came in the form of the dismissal of two Smith Barney executives who allegedly downloaded pornographic images from the Web and used the corporate network to send them to

each other and to two

other employees.

Because the

employees were

fired and not merely

suspended, and

because one of them was a highly regarded analyst of brokerage firms and asset management companies, the action drove home the seriousness with which Smith Barney regards the offense. Like most companies, Smith Barney clearly states in its employee handbook, "There is no personal privacy when you use Salomon Smith Barney's equipment and services.... Improper use may subject you to disciplinary action, including termination of your employment...." A memo sent to all employees from John Donnelly, managing director for human resources, didn't pull any punches.

"Using firm facilities to communicate such offensive material is totally unacceptable....," he wrote.

Donnelly didn't have to mention that the policy applies to everyone, even hotshot analysts. The thousands of messages identifying the dismissed executives that were flying through the company's e-mail made that point loud and clear.

—Art Jahnke



Marketing 101

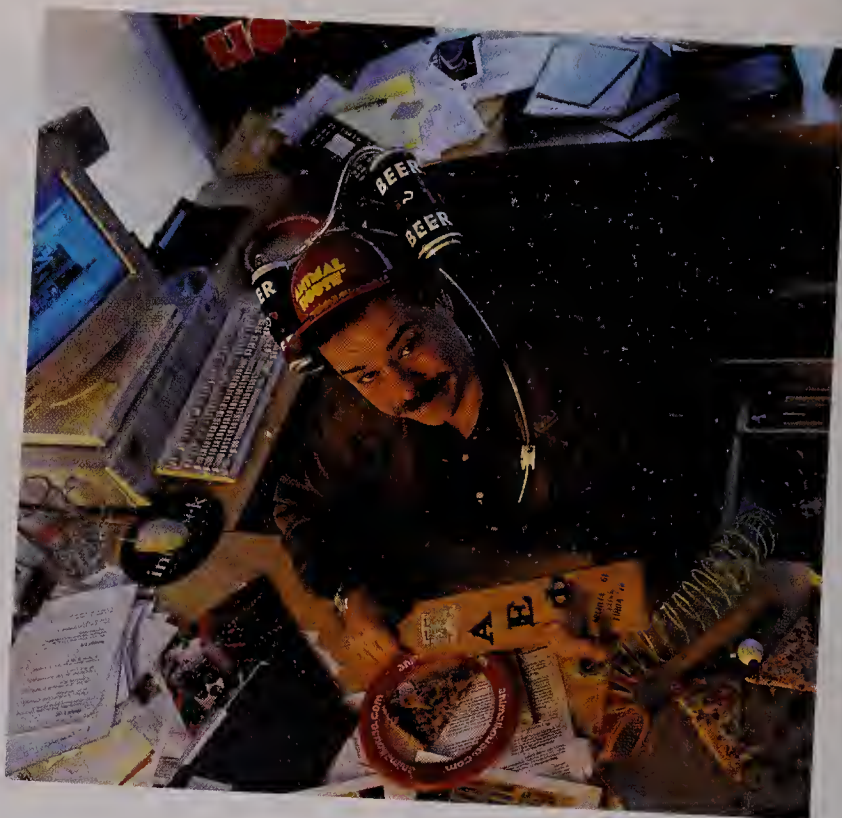
TWENTY YEARS after Bluto and his frat buddies made their irreverent mark on the silver screen, a new Web site hopes to make its mark on college students' computer screens. Called animalhouse.com after the 1978 Universal Studios hit, *National Lampoon's Animal House*, the site aims to give collegians a home on the Web—and give advertisers a way to reach them, says Jay Samit, animalhouse.com's president.

Most consumer product branding—"what soda you drink, what beer you pour, what car you drive"—is imprinted for life by the age of 25, Samit says. College kids don't watch much TV or read lots of magazines or newspapers, he notes, but they make up a sizable chunk of the Web audience.

Among its features, the site offers free e-mail, Web pages, Net telephony, chat, classified ads and news. There's also college-focused content, such as school-specific areas for posting information about local "raves" and other events, and a Résumé Wizard that helps students write their résumés and post them in a database potential employers can view. Some features are similar to those offered by Tripod, a 1.2 million-member community site targeted at Gen X-ers aged 18 to 34. But Samit believes animalhouse.com's tight focus on the college market sets it apart. The site has already recruited student reps who will provide campus content at more than 200 schools, Samit says.

Samit won't reveal how much animalhouse.com spent developing the site, except to note that it was more than the \$5 million price tag of the movie. At this writing, just a few weeks after the March launch, he says, the site is already profitable, thanks to presold advertising buys and sponsorships of on-campus events. Future revenue plans include culling transaction fees from retailers' sales at a planned online mall and selling students a no-fee credit card that they can apply for online.

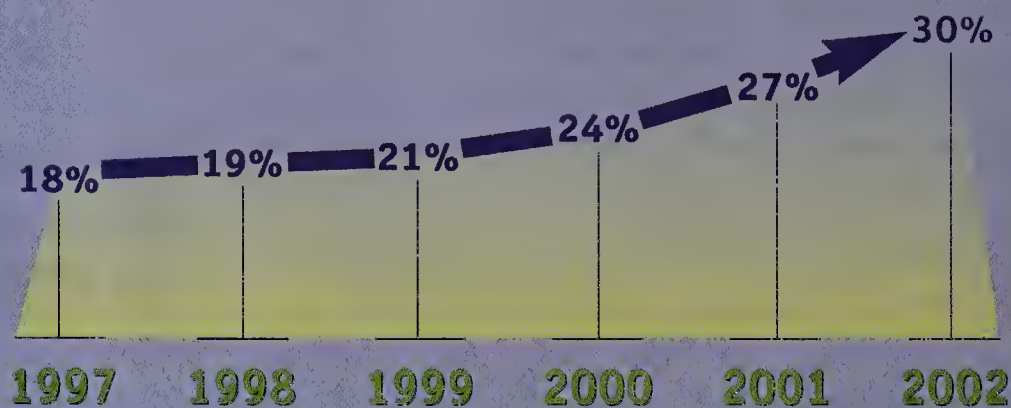
—Sari Kalin



Schoolwork: Jay Samit's animalhouse.com cost more to make than the movie.

Window Shopping

Percentage of Internet shoppers who regularly purchase online



SOURCE: THE STRATEGIS GROUP INC. (WWW.STRATEGISGROUP.COM)

PHOTO BY LARA JO REGAN; ILLUSTRATION BY OCTAVIO DIAZ

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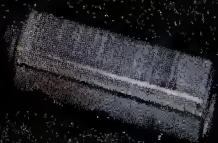
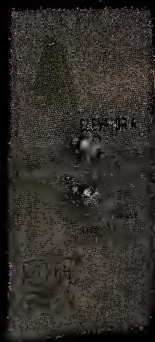
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A DATA NETWORK
AS RELIABLE
AS THE VOICE
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Off the CyberShelf

**Protecting Yourself Online:
The Definitive Resource
on Safety, Freedom and
Privacy in Cyberspace**

Robert B. Gelman with Stanton
McCandlish and members of the
Electronic Frontier Foundation
HarperEdge, 1998
\$15 paperback

HOW CAN YOU PROTECT your Web content from unauthorized use or plagiarism? Is it legal to read your employees' e-mail? And what can you do to plug the flow of unsolicited messages clogging your system's inboxes?

In his new book *Protecting Yourself Online*, Robert B. Gelman tackles those issues and dozens of others concerning electronic privacy, security, rights, responsibilities, legal questions and ethical dilemmas. Written with several Electronic Frontier Foundation leaders, the guide touches on everything from censorship to copyright to online codes of conduct.

Writing definitively about such fluid topics is challenging. Technological advancements,



increasing Internet use, court decisions, new regulations and sheer human ingenuity keep changing the questions and the answers. As EFF cofounder Esther Dyson notes in the foreword, serious researchers will find far more and far more up-to-date information on the Web than in any book about the Web. (Among the recommended resources is the book's companion Web site at www.eff.org.) It's understandable, then, that *Protecting Yourself Online* takes a selective and basic approach, focusing primarily on those issues least likely to change.

While some of the author's observations are so basic that highly experienced Web users may

be put off, most of the discussion holds value for all readers. Gelman blames sensationalistic mainstream media coverage for generating unrealistic public fears about the Internet's ills, such as pornographic sites and crime. "The online world represents a microcosm of the world around us, with its knowledge, its wonder and its darker side," he writes. "You wouldn't let the existence of so-called adult bookstores keep you and your family from walking down the street, nor should you let the existence of adult Web sites keep you or your family from using the World Wide Web."

Despite the uneven tone, the book is packed with solid information, discussions, definitions, resources, links, advice and provocative quotes like this one from EFF cofounder John Perry Barlow: "Relying on the government to protect your privacy is like asking a peeping Tom to install your window blinds."

Well-organized chapters and a comprehensive index compensate for the lack of a glossary, and many readers may find the list of 15 privacy-protection techniques and tools worth the price of the book.

—Anne Stuart

HISTORY IN THE MAKING

“WebTV is the Altair of the information appliance world. Maybe it's like the PC market in 1979—the standard hasn't shown up yet.”

—Frank Gens, senior vice president, Internet Research, IDC, at the Directions 98 conference in San Francisco, March 1998

A Big Look at Small Business

37% of small businesses are online

Of Those:

38% purchase products and services online

53% use the Web daily

65% use e-mail daily

80% use the Web to seek information on products and services

SOURCE: "U.S. SMALL BUSINESS INTERNET SURVEY" CONDUCTED IN FEBRUARY 1998
BY CYBER DIALOGUE (WWW.CYBERDIALOGUE.COM)

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Joe Dunne, President, Cultor Food Science, Inc.

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One Man's Band

AHERNDON, VA., COMPANY HAS GOOD NEWS for everyone who has ever bought a CD because the artist had a couple of great tracks and then found themselves hitting the skip button more than the play button. The Music Connection, which does business on the Web as Musicmaker.com, recently launched a Web site (www.musicmaker.com) that lets users create customized CDs by picking and choosing songs from an online library. A customer can lay down his favorite Beethoven sonata and follow that with his favorite movement from Mozart's *Magic Flute*.

Using licensing deals with 25 record labels, Musicmaker has amassed a repository of more than 150,000 songs covering five musical styles including jazz, blues and classical. Musicmaker relies on proprietary software to index and search a relational database that stores the selections. Music lovers can search the site's online catalogs, listen to 30-second snippets via RealAudio and compile a lineup of up to 70 minutes' worth of tunes. Unix-based PCs "acquire" the selected music from master CDs; custom discs are then produced by CD-R writers. By June, Musicmaker will team up with Liquid Audio to allow customers to download songs directly to their computer hard drives.

While selecting individual pieces of music is as easy as point-and-click, certain limitations apply. For example, people can't put jazz and classical music on the same CD or mix and match among artists in one of the catalogs.

Until now, the hardest part of getting Musicmaker to fly has been convincing record companies to sign on, says Bruce Block, the company's chief technology officer. But since its launch in October 1997, Musicmaker has been chipping away at industry resistance. "In the record business, the primary asset is music, and most of it lies in vaults," Block says. "Through our compilation service, record companies can get money for older music without launching new marketing campaigns."

—Megan Santosus

Taxation Without Representation

For three years, ever since Network Solutions began collecting \$100 registration fees for Internet addresses, the Herndon, Va., company has given close to \$50 million to the National Science Foundation. Now a federal judge in the District of Columbia has ruled that NSF had no right to take the money, or more accurately, tell Network Solutions to hand it over.

As it turns out, the NSF may be a victim of the Web's success. In the early 1990s, the foundation assumed responsibility for the registration of all nonmilitary Internet registration, which at the time meant educational facilities with the suffix "edu," and in 1993 it turned the job over to Internet Solutions. By 1995 however, corporate America had stampeded to the Internet, and in September of that year, 97 percent of registrations bore the suffix "com." The NSF claimed that it could no longer foot the bill for those registrations and authorized Network Solutions to charge a registration fee, with 30 percent of that fee set aside to offset government spending on the Internet infrastructure.



The recent court decision, which declared that the 30 percent solution constituted a tax that had been enacted without Congressional approval, leaves the NSF's \$50 million booty in limbo.

"We are reviewing the case," says Beth Gaston, an NSF public relations officer. "We are looking at all of our options."

Those options include appealing the case, giving the money back to those who paid it and asking Congress to intervene by passing legislation that would legalize the tax retroactively.

—Art Jahnke

Correction

An article in the April 1, 1998, issue of *CIO Web Business*, "Reading Between the Lines," incorrectly listed International Data Corp.'s Web address. The correct URL is www.idcresearch.com. We regret the error.

Web Hosting Services



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Round Numbers

WebRing, a home-grown tool for linking Web sites, tries to survive the transition from freeware to free market

BY CYNTHIA BOURNELLIS

THE STORY OF WEBRING, A WEB SITE NAVIGATION bar that joins sites with similar types of content, makes a nifty parable of the evolution of the Web. Three years ago WebRing was a passel of code concocted by a high school student and handed out to anyone who cared to use it. Today, with 43,000 member rings and more than a million hits a day, it is the property of an Oregon company with high hopes of cashing in by selling advertising and taking a percentage of sales conducted on member sites. Doing that, its bottom-line-minded owners have learned, requires an ability to finesse the kind of new business strategies that don't come with the code.

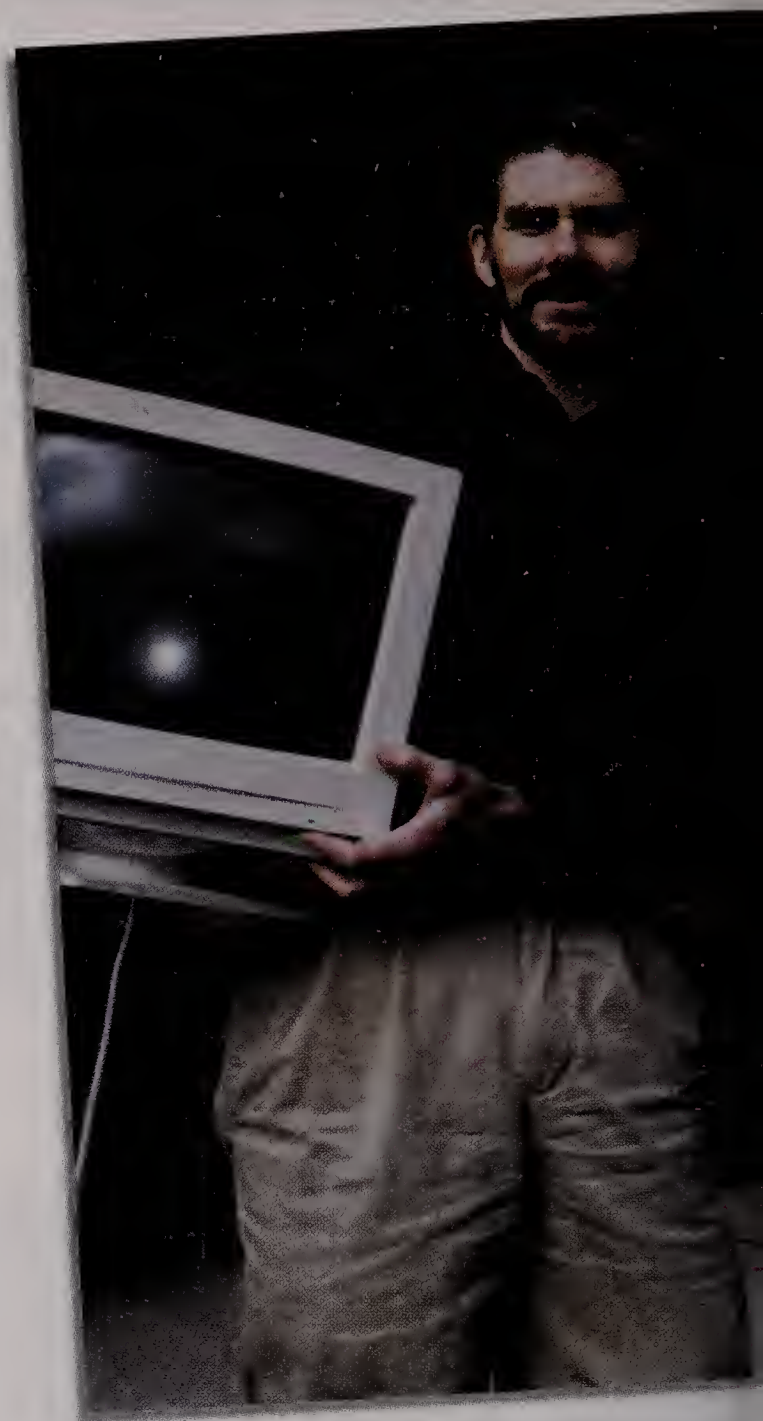
In 1995 a high school student named Sage Weil thought it would be cool if Web users could make their own clusters with sites offering similar kinds of content. So Weil wrote an HTML and CGI code that let Web developers place on their home page an easy-to-see navigation bar, pointing the way to other sites within the cluster. Weil made his code, which he called WebRing, available to all at no charge, and for years Web rings flourished. Many amateur Web developers used code similar to Weil's, but most relied on Weil's recipe, and in time it became a kind of unofficial standard. By the fall of 1996, when Weil entered Harvey Mudd College in Claremont, Calif., his code supported thousands of rings.

This extensive galaxy of rings caught the eye of a few hopeful Web entrepreneurs, but Charles Lanusse, chief executive officer, president and cofounder of a little Ashland, Ore., com-

pany called Starseed Inc., made Weil an offer for the WebRing system, which included the WebRing site with HTML, graphics, CGI servers code, scripts and lists of members that he couldn't

refuse. Neither Lanusse nor Weil will say how much money changed hands, but they will say that one very persuasive point in the offer was Starseed's agreement to maintain Weil's philosophy. That meant that Lanusse promises to provide a free service, not police member Web pages and not force advertising on members who object to it.

www.webring.com

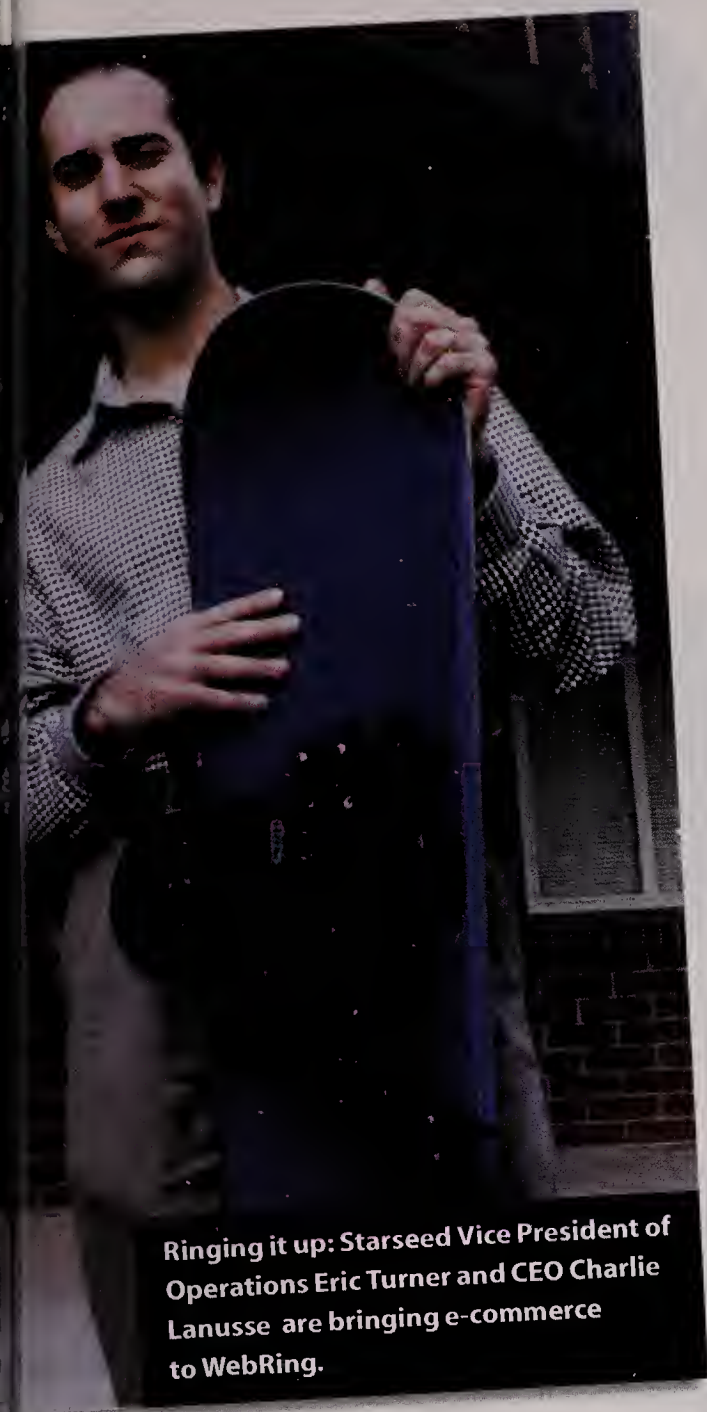


For Starseed, which has to answer to the 23 private investors who have sunk \$1.5 million into the venture, the agreement is less than ideal.

Ad revenues lie at the heart of Lanusse's hopes for profit, and a laissez-faire management of the site meant that he would have to sell advertising in an environment that he could not control. Starseed's first move was to place ad banners in the site's newly created RingWorld home page, which served as the directory of rings on WebRing.com and on the "Next 5" page, which shows the user the next five sites in that ring. It was a good start, but the placing of ads on only three specific areas made it unlikely that the ads would ever be seen by most visitors to member sites, who entered the ring through links other than WebRing's home page.

The commitment to Weil was not the only problem: Selling WebRing to advertisers meant dealing with over 500,000 sites, offering content that ranges

PHOTO BY TIM BOULARD



Ring it up: Starseed Vice President of Operations Eric Turner and CEO Charlie Lanusse are bringing e-commerce to WebRing.

from pornography to flower arranging. The Art Doll ring promotes dolls as works of art. The Hackers of a 3rd Kind ring espouses freedom of speech and trade over the Internet. The Anne Rice ring portrays the popular gothic writer. And the angel ring is for people who believe in angels. Lanusse believes that the most popular rings fall in the following categories: music, multimedia, sports, hobbies, crafts, games, entertainment, movies, people, computers and adult.

He knew that many of his member sites would have little appeal to mainstream advertisers, and a good portion were members of competitive services, such as Linkexchange. So he has decided to subdivide his real estate by this fall and chop WebRing's expansive categories of sites into small, more manageable groupings such as games, hobbies and computers—categories that are likely to appeal to certain types of advertisers. In April, satisfied that the site was ready for an outside advertiser, the company signed up with 24/7 Media Inc. in New York City, an

Internet advertising rep firm that charges advertisers between \$30 and \$40 per thousand page views and takes up to a 40 percent commission for every dollar sold.

"What attracted us to Starseed is the fact that they can break down WebRing's content into smaller categories," says Mark Burchill, senior vice president

transactions. Starseed will benefit from a 7.5 percent fee on gross sales of each product sold, which will cover the costs of credit card transfers to the banks, and Merchant Planet will collect a percentage of the profits and membership fees. Dan Grigsby, founder and president of Merchant Planet, predicts that he will

Selling WebRing to advertisers meant dealing with over 500,000 sites, offering content that ranges from pornography to flower arranging.

in business development and marketing at 24/7 Media. "What we sell is the audience, and WebRing has a broad range of content that will attract a broad user group."

And while Starseed will not try to control the content on any one site, it will handpick those Web site groupings that will be offered to advertisers. Burchill would not reveal the names of advertisers, except to say they will be the size of companies such as Microsoft Corp. and IBM Corp.

Lanusse says that about 10 percent of the rings, such as the Windows NT Professional ring, are commercial, and he believes those numbers will increase sharply as the next application of the WebRing system becomes available this month. WebRing members who choose the commerce system enable their Web sites for electronic commerce. Developed by Merchant Planet Inc., an Internet technology company in St. Paul, Minn., the commerce option will be accessible from a graphical button on WebRing.com. Merchant Planet will maintain the software code and will brand its offering as a WebRing service. WebRing members who choose the commerce option will pay \$100 for a one-time hookup fee, and those who don't conduct credit card transactions on the Internet will pay \$275. The funds will be moved via Cyber-Cash software, which secures credit card

have signed up 10,000 members by the end of the year.

In the meantime, Starseed is struggling up that incline that all new Web entrepreneurs must climb—building brand recognition. Faithful to its promise to Weil, the company asks but doesn't require WebRing members to display the WebRing logo on their pages.

Since the acquisition of WebRing, Starseed is moving quickly on several fronts, and Lanusse believes that his action is paying off: One of its closest direct competitors, Looplink, which is a division of Internet Marketing Group in Rockville Center, N.Y., has only 75 rings and approximately 2,000 sites. On the other hand, Lanusse remains mindful that on the Web barriers to entry are low, and there is nothing to keep a large, well-funded corporation from marching into the Web ring business.

"The ring concept is similar to the video gaming industry of earlier years," says Regina Joseph, senior analyst of content for Jupiter Communications LLC in New York City. Joseph says staying on top requires a savvy marketing plan and money to spend.

Charley Lanusse is hoping that he has enough of both. **CIO**

Cynthia Bournellis, who is a freelance writer based in San Jose, Calif., can be reached at cbournellis@cahners.com.



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THE MAIN ATTRACTION

Pulling the Plug-Ins

Plug-ins are on their way to extinction, eventually to be replaced by smart browsers and Java-based multimedia. But what do you do in the meantime?

BY SCOTT KIRSNER

IT'S STILL EARLY TO WRITE THE OBIT for plug-ins, but that day isn't far off. Hilmi Ozguc, who runs Narrative Communications Corp. (www.narrative.com), a plug-in pioneer that was the first company to make CD-ROM quality animation available on the Web, says, "We think plug-ins are totally dead, and no one is going to deal with them. They're user unfriendly, complex and it's a pain to upgrade whenever a new version comes out." Last year, Waltham, Mass.-based Narrative decided to convert its product to Java.

What's responsible for the demise of the plug-in? They were tough to install, annoying to maintain and generally erected a barrier between users and content. Sure, they jazzed up Web sites and provided a much-needed dose of dynamism in 1995, as Netscape's gray-background era came to a close. But they never hit critical mass. As of last year, IntelliQuest Information Group Inc. found that only 36 percent of all Web users had ever downloaded a plug-in.

As plug-ins fade, though, more high-end functionality is being integrated into browsers and deployed as Java applets. What's a Web site to do during the transition? Enhancing your content with multimedia can be vital to brand-building. But there's a balancing act involved: providing a rich experience without alienating users. Here's some advice on how to do it.

Does Anybody Really Care?

The first step is to determine whether your content would benefit from multimedia treatment and whether the audience really demands it.

"If I'm doing a site for an attorney, there's really nothing multimedia has to offer that will make the content better," says Leslie Harpold,

creative director at New York City's Fearless Media (www.fearless.net), a Web consulting and development firm. "But if you're a product like Jones Soda, and your job is being hip and your product is fun, then your Web site should reflect that."

Some experts recommend doing market research to figure out how techni-



cally adept your audience is. Can they cope with installing additional software just to view your site? "If we're building a site for a supermarket, we go to a supermarket and ask what those users are comfortable with. Who are they? How sophisticated?" says John Young, the chief creative officer at Web agency Poppe

Tyson Inc. in New York City (www.poppe.com). "Get some of your users in a room and see what they demand."

When it comes to intranets, multimedia may be totally irrelevant. If the focus is on delivering information quickly, why force animation or sound clips on users? You may be getting in the way. Rich Mironov, the director of product marketing at Wayfarer Communications Inc. in Mountain View, Calif. (www.wayfarer.com), which makes push software for corporate use, says that site enhancements on an internal page that people use several times a day can get redundant fast. "If they've seen a video clip of the CEO once, they don't ever need to see it again," he observes. "We take the position that plain text in large letters can be more effective and [will] wear out more slowly than audio, video or animation. If your sales and inventory numbers are important, it's because they are, not because you've animated them in 3-D."

Stick with the Standards

For some sites, plug-in content can be vital: Why wouldn't a wedding band want to offer a RealAudio sample of its music, or a gaming company provide a Shockwave demo of its product?

Others use flashy multimedia content to encourage repeat visits. "The challenge is how to get people to come back again and again," says Fred Kirsch, who runs the Web site for the Boston-based New England Patriots (www.patriots.com). "Unless you have dynamic features on your site, that's hard to do. Besides, we're in the entertainment business." During football season, the Patriots site features a daily TV show called "Cyber Sideline" produced exclusively for the Web in RealPlayer.

If the situation requires it, and the audience isn't averse to using a plug-in, developers recommend settling on one of the six most common plug-ins:

- RealNetworks Inc.'s RealPlayer for streaming audio and video
- Adobe Systems Inc.'s Acrobat for typeset documents like brochures
- Macromedia Inc.'s Shockwave for interactive games and CD-ROM
- Macromedia's Flash for simpler animations
- Apple Computer Inc.'s QuickTime for nonstreaming video

■ iChat Inc.'s iChat for real-time text conversations

"All of those plug-ins have extremely high penetration," says Harpold at Fearless Media. "I would never bat an eyelash about using them on a site."

Make It Easy

One of the cardinal rules of plug-in use is always to include an obvious link to the site where the user can get the plug-in. It's also good practice to let users know how large the plug-in is (in megabytes) and how long the download will take.

Kirsch, Patriots director of interactive media, goes a few steps further. His site has an Equipment Room where in one session visitors can collect all the plug-ins they'll need on the Patriots decked-out site. "We explain what they'll need, and why we use it," says Kirsch. "We get all the downloading out of the way, so it doesn't disrupt the flow of later visits."

Recent versions of Microsoft's Internet Explorer have been making the process even easier, enabling users to download plug-ins in the background and have the software self-install. That's one more step on the road to browsers that add functionality yet put fewer demands on the user. Netscape Communications is expected to follow suit with its browser.

Balance the Haves and Have-nots

Sites that deploy plug-ins have to take extra care to offer an equivalent experience for those that choose not to use them. "Give users the choice between the bells-and-whistles version or a basic, scaled-down version," says Harpold. "But you can't skimp on either side. You don't want to punish users who don't have plug-ins."

That's the balance that Atlanta, Ga.-based Elemental Interactive Design + Development (www.elemental-atl.com) struck in designing the Web version of IBM's 1997 annual report (www.ibm.com/AnnualReport/1997). The company liberally deployed Macromedia's Flash animations, but a non-Flash version makes use of animated GIFs instead. "Flash helps set the tone. It adds visual intrigue to the site," says Stephanie Roberts, vice president of production services at Elemental. "But we don't want you to miss anything."

Stay Plugged In to Users

After a plug-in has been deployed, the process isn't over. What do the users think? Are they having problems? (If so, they're likely to see any problems as your responsibility, because you required them to get the plug-in in the first place.) It's important to listen to user feedback about the plug-ins on your site and periodically reevaluate whether they're adding value.

"If something isn't working, you'll hear about it," says Brian Hecht, president and CEO of The Electronic Newsstand Inc. (www.eneews.com), a Washington, D.C., online magazine retailer that has been in operation since 1993. "The Web is very democratic. Remember the blink tag? You don't see that much any more. And frames have fallen out of favor. We used to use them, but our customers said they were a pain in the neck."

"The bottom line is that we're grateful if users have taken the trouble to come to our site, and we don't want to drive them off," adds Hecht. "So we listen."

Future Directions

Two trends conspire to eradicate plug-ins: the maturation of Java and the increasing integration of plug-in functionality into the browser. But Java still sparks griping from many users—it can slow a computer and cause crashes. And browsers aren't yet the Swiss Army knives that some want them to be. In the meantime, many developers are focusing on new features—personalization, profiling and agent technology—that rely on neither plug-ins nor Java but rather put the burden on the server. "The value in these technologies is that they're not obtrusive," says Poppe Tyson's Young. He looks forward to the day when Web surfers can visit any site without having to stop and install a new piece of software.

"The best technology, of course, is invisible. That's the way it should be," he says wistfully. "You use the technology to tell your story, but you don't want the technology to upstage your product."

When do we get there? As with all Internet predictions, the date is set in stone: Q4 of 1999. Or the year after that. 

Scott Kirsner writes about technology and business. He can be reached at kirsner@worldnet.att.net.

Child Care

Web sites that collect information from children have two choices: They can follow their own rules or be forced to follow the rules of the FTC.

BY LINDA A. GOLDSTEIN

THE ISSUE OF ONLINE PRIVACY HAS BEEN THE SUBJECT OF debate since the advent of the Internet, and particular attention is now being focused on the area of children's Web sites. The Internet makes it easy to collect information about young Web site visitors without any parental involvement. Children sitting at a computer terminal can heedlessly disclose information about themselves and their families or establish an ongoing relationship with someone without a parent's knowledge. Naturally, parents worry that their children's Internet use compromises their privacy and may even threaten their safety.

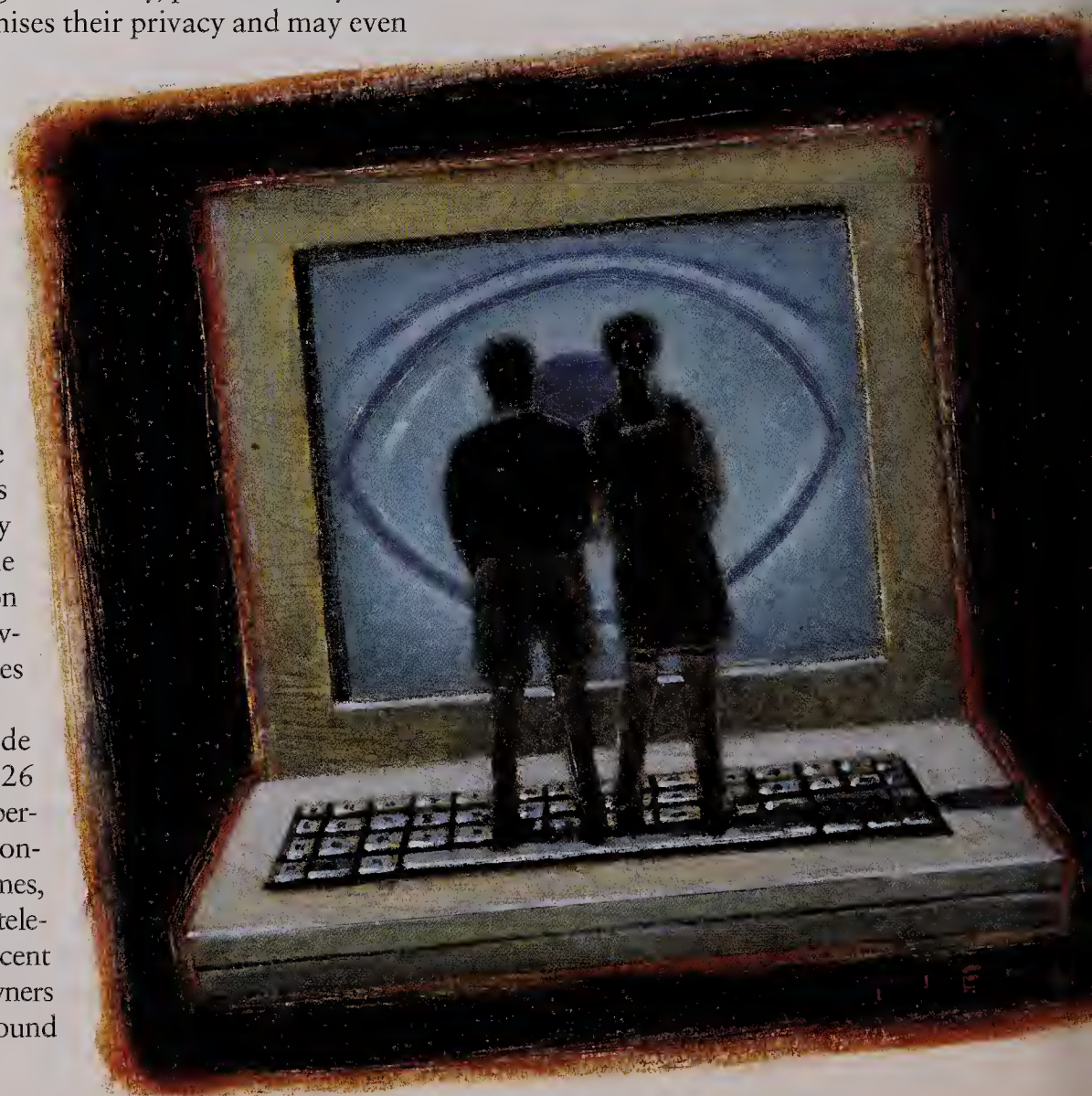
Now the Federal Trade Commission, the Children's Advertising Review Unit (CARU) of the Better Business Bureau and the White House have elevated concerns about children's privacy to a top priority. Operators of sites directed to children must bring their sites into compliance with FTC guidelines, which require that all sites collecting information prominently post a notice indicating the type of information collected and the uses being made of that information. If they don't, they face the possibility that the FTC will claim they have violated Section 5 of the FTC Act, which makes unlawful "unfair or deceptive acts or practices in or affecting commerce."

In October 1997, the Federal Trade Commission conducted a survey of 126 children's sites. The FTC found that 86 percent of those sites were collecting personally identifiable information such as names, e-mail addresses, postal addresses and telephone numbers. Yet fewer than 30 percent of these sites posted a privacy policy. Owners of children's sites whose policies were found

to be noncompliant received an e-mail message from the FTC, advising them that compliance was an issue that the FTC was concerned about. Web site owners who did not receive notice should not take comfort as this may simply mean that the site was not included as part of the FTC's review, which was limited to sites listed on Yahoo Inc.'s Yahoooligans.

The FTC has since conducted a second systematic review of Web site information collection practices, including children's sites, to determine the extent to which these sites are posting privacy policies and conforming to industry self-regulatory guidelines. Those guidelines also call for prominent posting of a notice that the site is collecting information, as well as a mechanism that allows the user to tell the marketer that he does not want any information about him to be shared.

The results of the second survey, which were unavailable as of this writ-



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ing, will be reported to Congress and possibly used by the FTC as a basis for making recommendations on whether self-regulation is working or if formal legislation is necessary. The FTC has also threatened to bring enforcement action

policy but does not meet each of the technical guidelines espoused by the FTC. The following are some common elements that should serve as a minimum standard for any Web site owner looking to implement a privacy policy.

A site owner with no policy posted is more likely to be targeted than a site owner that has a policy but doesn't meet FTC guidelines.

against sites it found to be noncompliant. Clearly, this is a wake-up call to the industry to truly implement self-regulation or face FTC action.

For many advertisers, the groundswell of concern over this issue and the urgency being imposed by the FTC may come as a surprise. Last June, in a public workshop on consumer privacy conducted by the FTC, the majority of advertisers reported that they were not selling or exchanging any of the personal data collected. Rather, this information was used mainly for internal purposes in order to enable the marketer to refresh the site with more accurately targeted ads. In addition, many advertisers have been surprised to learn that the guidelines the FTC expects the industry to follow have been set forth not as a result of any formal rule-making process but in the form of a letter sent to the Center for Media Education, which had requested the FTC investigate the owner of a Web site called KidsCom. Many marketers are concerned about the lack of due process and industry input concerning these suggestions, which appear to have been elevated to the position of industry guidelines.

To make matters more complex, the FTC is not the only player in this field. CARU and the White House, through Ira Magaziner, have also promulgated privacy policies, and the three policies address Web applications that differ in scope. All three policies also leave unanswered certain critical issues such as what constitutes "prominent" disclosure, what constitutes parental consent and what form the consent must be in.

Immediate action is necessary. A site owner without any policy posted is clearly more likely to be a target of an FTC action than a site owner that has a

First, the site should contain a clear, prominent privacy notice directed to parents disclosing

- Who is collecting the information
- What information is being collected
- The intended use of the information
- To whom and in what form the information will be disclosed to third parties
- The means by which parents can prevent the retention, use or disclosure of the information

This notice should appear before any information is requested. While the full terms of the policy can be set forth in a separate section accessed by a link, notice of the policy should appear on the home page and at any locations within the site where personal information is requested. CARU also recommends that the site direct children to ask for parental permission before answering any questions or providing any personally identifiable information online.

Second, parental consent must be obtained prior to releasing personally identifiable information to third parties. It should be noted that neither the FTC nor CARU have specified how that parental consent is to be obtained. There is currently a debate within the industry as to whether simply accepting an e-mail message from a parent is sufficient or whether a written confirmation is required. CARU has suggested in discussions with some site owners that an e-mail communication may not be sufficient.

CARU has promulgated additional guidelines relating to chat rooms and bulletin boards, selling online, linking to other sites and identification of advertising. The organization recommends that site owners obtain parental consent before allowing children to participate in a chat room or on a bulletin board. Children should also be encouraged to

use a screen name for all activities involving public posting of personally identifiable information.

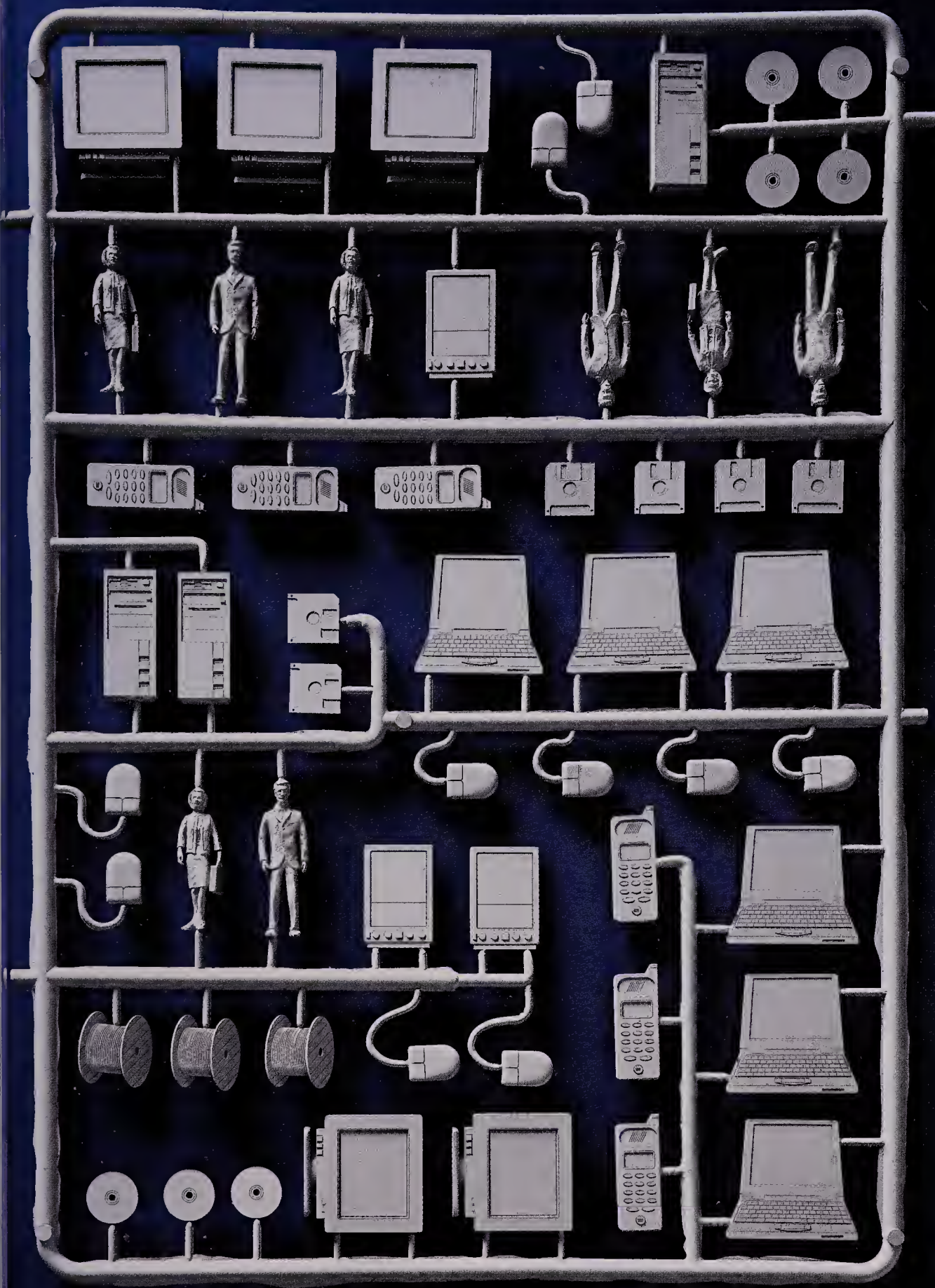
Advertisers selling online should display a clear warning notice to children when they are being targeted for a sale and should require parental consent before an order is accepted. Site owners should also provide parents and children with a clear mechanism to cancel orders placed without proper consideration.

CARU's guidelines further provide that advertisers should not knowingly link their sites to pages of other sites that do not comply with CARU guidelines. This provision has met with some resistance from advertisers who feel this places an undue burden on site owners to monitor the practice of other sites. Unlike the broadcast media, the separation between editorial content and advertising is not always clear on the Internet. Consequently, CARU has proposed that advertising on a Web site should be clearly identified as such, either with a textual notice or some other graphic symbol indicating that the content is of a commercial nature. For example, one company has created a symbol called the "Ad bug" which can be licensed by companies and placed next to all sections of the site deemed to be advertising.

It is clear that the window of opportunity for sustaining self-regulation is closing. There are now more than 80 bills pending in Congress proposing to regulate privacy on the Internet. If the industry does not fare well in the FTC's survey, some form of legislation is likely.

Perhaps the greatest downside of legislation and potential enforcement action by the FTC is the impact such action may have on activities beyond the Internet. The whole area of data collection has been a source of tension between advertisers and those who seek to restrict such practices. If the marketing community's ability to collect data via the Internet is curtailed or restricted, there is a good chance such restrictions will spill over into the area of direct mail. If that were to occur, the consequences to the marketing community could be devastating. **CIO**

Linda A. Goldstein is a partner in the New York City-based law firm of Hall Dickler Kent Friedman & Wood LLP where she specializes in new media law.



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Transactions in the Age of the Consumer

Good help Is Hard to Find

Finding a Web consultant is easy, but choosing the right one for your company may not be.

Tips on how to succeed from those who've been there.

BY SARI KALIN

THESE DAYS, FINDING A WEB CONSULTANT IS ABOUT AS EASY as finding a pizza parlor. Just look in the local Yellow Pages. Chances are, "Web Site Design Services" are sandwiched between "Weather Vanes" and "Wedding Consultants." But finding the *right* consultant for your Web project is more involved than locating the nearest Domino's. Ad agencies, Web design boutiques, traditional systems integrators and specialized Internet programmers are among those hawking Web services. Even seasoned firms, however, have only two or three years of Web experience. And it's tough to find one equally strong in the strategic, creative, technical and project management talents needed to cook up a successful Web site.

Reader ROI

READ THIS STORY AND LEARN

- ▶ Why all Web consultants are not created equal
- ▶ How to look for signs of trouble ahead
- ▶ Why the lowest bid is not always the best
- ▶ Why physical proximity may still be important
- ▶ Why the right consultant today is not necessarily the right one for tomorrow
- ▶ How to be an ideal client



VALORIE WEAVER,
*executive VP of Rx
Remedy and editor-in-
chief of Remedy maga-
zine, is closing in on a
cure to her consultancy
headache.*

Pick the wrong pizza place, and you might get an upset stomach. Pick the wrong Web consultant, and you'll need more than a few Roloids to get over it. Just ask Valorie G. Weaver, executive vice president of Rx Remedy Inc. and editor-in-chief of *Remedy* magazine, a consumer health magazine based in Westport, Conn. In January 1997, Remedy hired Avalanche Systems Inc., a hip Silicon Alley firm in New York City with a snazzy portfolio, to build its Web site. The project was supposed to take six months and cost \$345,000. One frustrating year later, Remedy had spent \$240,000 and still did not have a finished site. Avalanche, meanwhile, was in dire fiscal shape, says Troy Tyler, Avalanche's executive vice president and chief operating officer, who was hired in August 1997 to find a financial partner, turn the company around, turn loose unprofitable clients and win new ones. Tyler told Weaver the newly reorganized company, called Avalanche Solutions Inc., could finish the site only if Remedy paid it

on a time and materials basis, roughly another \$219,000. Weaver was "appalled"; Tyler felt he had no choice.

The two companies parted ways, and Remedy kept working with an Avalanche subcontractor. At this writing, the site is due to launch in the first half of this year—nearly a year later than planned, albeit only \$50,000 over budget.

How can you make sure your Web consulting experience won't give you such indigestion? *CIO Web Business* asked Remedy, Avalanche and other Web clients and consultants to share their tips. Some of their advice rings true for any outsourcing deal: Prepare a detailed request for proposals (RFP); check references; have the right people on staff to manage the consultant's work. Other tips are Web-specific: Make sure the consultant's work plan allows time for testing the site on different browsers; test out some of the sites it has designed to see how long they take to load and how well they work.

Search Your Soul



The first step toward finding the right Web consultant is to ask yourself a deceptively simple question: Why do you want to be on the Web? Assembling a team from marketing, sales, IS and other divisions can help a company shape its Web business plan. Certainly, a consultant can help develop and refine your Web strategy, too. But don't expect it to do so without some strategic soul-searching on your company's part.

Next, size up staff strengths and weaknesses to determine what skills to seek outside: Do you need someone to take over the whole project, or do you just need a few contractors to fill in the holes? Do you have the staff to maintain the site? And do you want the consultant to give you the tools and training to do so? When Office Depot Inc. laid plans for a Web store, for example, the company clearly understood how to be a successful retailer. But it needed someone who understood Net culture and information design, says Beth VanStory, vice president of Office Depot Online in San Francisco. Studio Verso, also in San Francisco, fit the bill. Office Depot also interviewed several systems integrators but decided in-house IS staff could handle the technical demands alone, since they had already built a private Web site. "In the time it would have taken people to get up to speed on our legacy systems," VanStory says, "we could be developing our Web system."

Even if you have a multifunctional team, make one person the lead communicator with the consultant. And make sure someone internally is technically savvy enough to know whether the consultant is on target. Remedy did not hire its own webmaster until it was about nine months into the project, Weaver says—clearly a mistake.

If you already have a Web site, there's one more thing you should do before you call a consultant: Conduct a site audit. Weed out material that's outdated or not in line with corporate philosophy, recommends Manuel



Beth VanStory, VP of Office Depot Online (front row, second from right), found using internal IS staff with a consultant was the right combination.

Terranova, content manager for Xerox Corp.'s Internet channel and marketing group in Palo Alto, Calif. It's much easier—and less costly—for a consultant to redesign a 2,000-page site than a 20,000-page one.

Visit, Look and Listen



Visit consultants on their own turf to learn things that won't show up in a dog-and-pony show: Is their headquarters a converted garage? What creative and technical people do they have working on staff? Is the atmosphere chaotic?

During preliminary interviews, listening to the questions consultants ask is as important as listening to what they tell you. If all they do is talk about zippy new Web technology, they may not be able to help you develop your strategy. "The good ones will force you to answer

What Will Make You an Ideal Client

1 Don't expect the consultant to work in a vacuum. Propel Technologies Inc. in Portland, Maine, gives its clients a list of roles they need to fill, says President Amy Smith.

2 Deliver your content and core creative material on time and in a format the Web firm requests. Ken Burke, president and CEO of

Multimedia Live in Novato, Calif., says that is the biggest problem Web firms face.

3 Have a strategy and communicate it clearly. Most problems arise when a company hires a firm to start building a site, says Rosalind Resnick, president of New York City-based Internet marketing firm

NetCreations Inc., "and they realize halfway through that that's not what they wanted to accomplish."

4 Develop a cross-functional team, but still put one person in charge. Otherwise, warns Lee Dingle, worldwide director of interactive solutions at Cambridge Technology Partners Inc. in Cambridge, Mass.,

"you're trying to build a Web site by committee."

5 Make clear what ROI you want—say, an increase in orders. Otherwise the consultant won't be able to deliver it, says Matthew de Ganon, president and vice chairman of K2 Design Inc., a full-service interactive ad agency in New York City.

—S. Kalin

the hard questions,” says Michael Lehman, senior Internet business manager at ACCO Brands Inc. in Lincolnshire, Ill., which makes the Day-Timer line of personal productivity tools.

Make sure you meet with all the consultant’s key players—not just those in marketing or new business development—and find out if they will be outsourcing any part of your project. Remedy’s Weaver says she did not know Avalanche was outsourcing the site’s programming to Thaumaturgix Inc. in New York City until she got a call from Thaumaturgix’s founder, Peter Dolch, last summer. He said his company had not been paid in four months—and could not continue until it got paid. Weaver, who had been wondering all along why simple technical questions were taking two days to get answered, agreed that Remedy would work with and pay Thaumaturgix directly.

Avalanche’s former director of technology, David A. Sinclair, says Avalanche’s company policy at the time was to not tell clients when work was outsourced—a policy he strongly disagrees with. When he left Avalanche in July 1997, he urged Dolch to make the call to Weaver, since things run much more smoothly when a client has a direct relationship with an outsourcer. How can you tell if a company may have to outsource? “Ask to see a full rundown of the project team,” Sinclair advises, “[and] find out each person’s relative workload.”

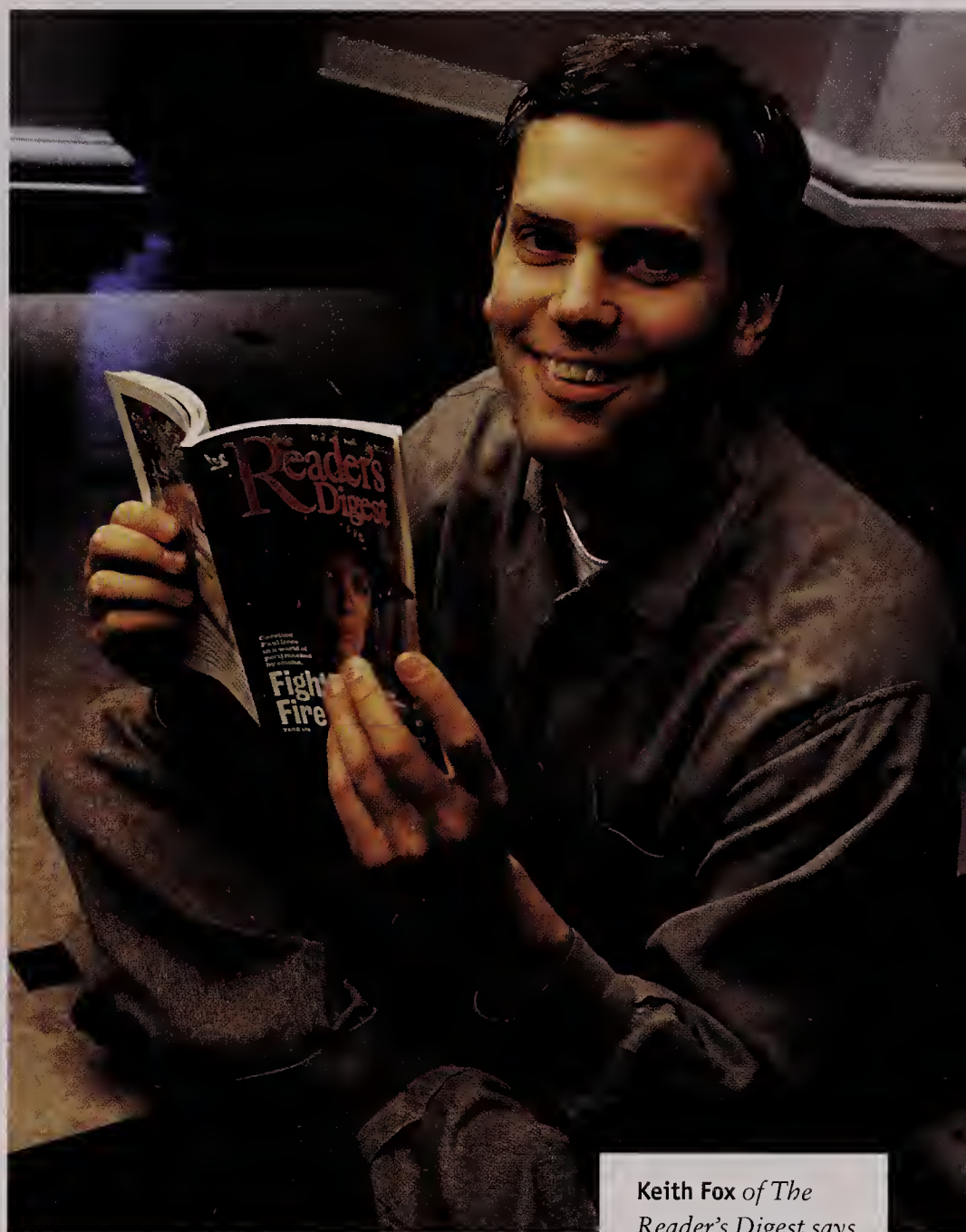
Follow the Money



You want your Web shop to be financially stable so it will be around long enough to finish the job. But unless the contractor is a publicly traded company, there’s no sure way to measure its stability.

Avalanche got into trouble because it was a fixed-bid, job-oriented shop with ad-hoc procedures, Tyler says. It would do whatever it took to complete a project, even if the fee did not cover all the work. Projects could creep out of control, as Remedy’s did, he says. (Weaver, however, says that the scope of the project changed, but it never grew beyond what Remedy originally asked for in the RFP.) To save the company, Tyler found an investor: Razorfish Inc. in New York City, part of advertising giant Omnicom’s Communicade Network, to take an undisclosed stake in Avalanche. Tyler also instituted formal procedures. Now, Avalanche charges a fixed fee for the exploration phase of a project, during which it develops a comprehensive project plan. Then, when Avalanche and the client agree on the scope, they will sign a fixed-price contract to develop a site, Tyler says. Clients can take the project plan and find another firm to bid on and complete the work if they don’t want to pay Avalanche’s prices; Avalanche can even help them find another firm, Tyler says.

One sign that a company could have fiscal staying power is if it offers services that have higher margins than Web site design, says John Hearn, lead analyst for interactive marketing at GartnerGroup Inc. in Stamford, Conn. Such services include media placement or sophis-



Keith Fox of *The Reader's Digest* says proximity matters to him.

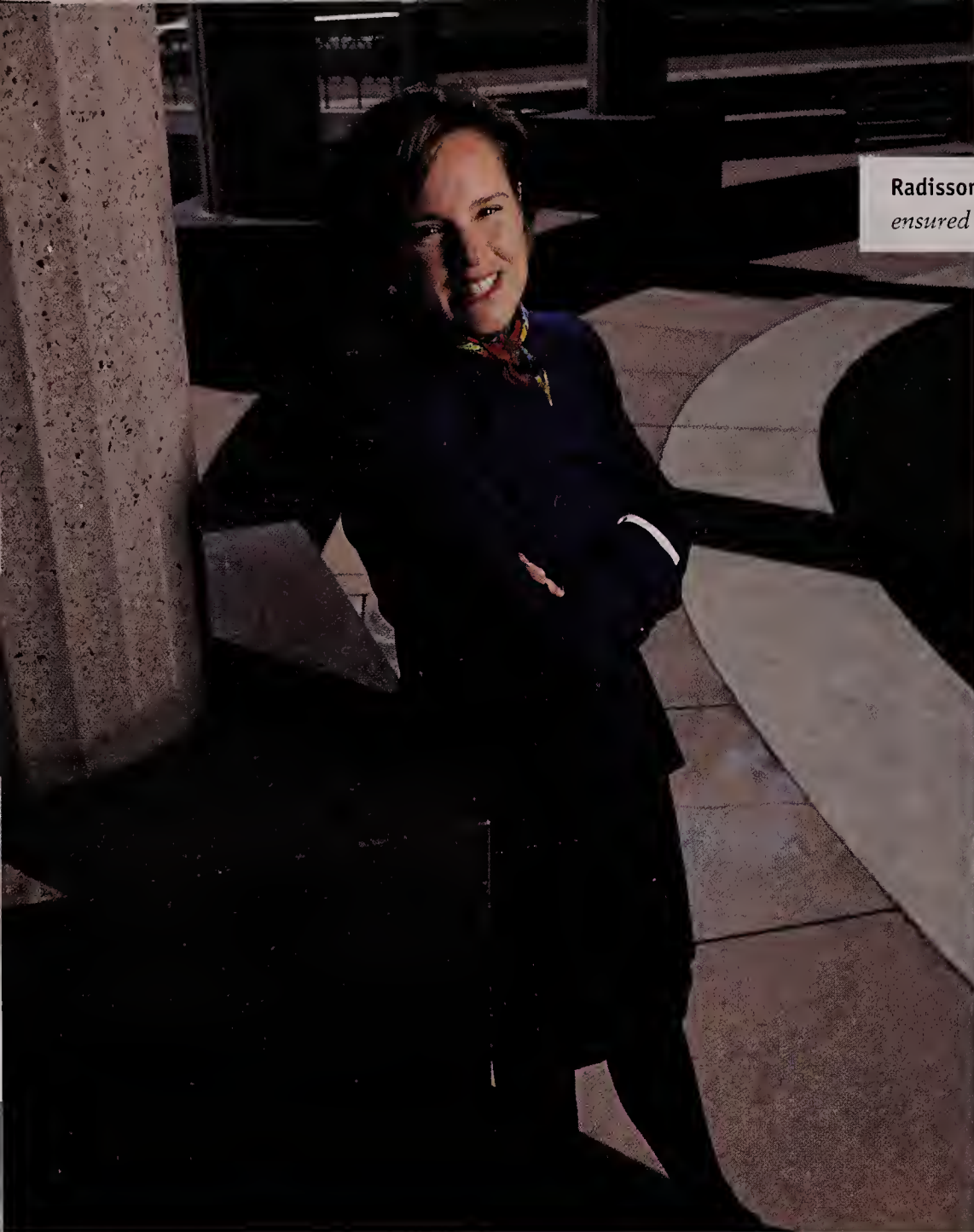
ticated back-end systems integration.

You also want to make sure that a firm is not underbidding on a contract because it is eager to get work or does not fully understand what the job will entail. Ask the consultants to give you a quote—and a time frame—for each element of the process, so you can compare quotes from different firms, piece by piece, says Dennis Kwasnicki, executive director of the Association of Web Professionals in Mississauga, Ontario.

Web Consultants Make Good Neighbors



Hot firms in major Web or business hubs will often have clients all over the country, even outside the United States. The Web, after all, is a distributed communications medium, and trading e-mails or accepting work orders over a Web site can be a good way to stay in touch. But for some clients, virtual contact is not enough; they prefer to work with firms that are close enough to meet with face-to-face. At The Reader’s Digest Association Inc., based in Pleasantville, N.Y., Keith Fox, marketing director for new business development, says



Radisson Director of Interactive Marketing Rachael Marret ensured exclusivity in contract language.

projects run more smoothly when he works with firms in New York City. "If I needed something, I could be in [my Web designer's] office in an hour," Fox says. "In new media, which is a 24-hour-a-day, 7-day-a-week business, [that's] very important."

Make Sure They Can Handle the Job



When Xerox launched a major corporate site redesign in 1996, it picked a large advertising shop to help. Some of the site's creative elements tied into the upcoming Atlanta Olympics. As the project progressed, however, it became clear that the unnamed firm had never before coordinated a Web project on the scale of the Xerox relaunch, Terranova says. Deadlines slipped. Xerox had to step into the management breach, running its own daily conference calls and meetings. The launch was delayed until August 31, 1996—weeks after the Olympics, meaning that the company had to scrap Olympics-themed creative work. "Had we known what we were getting into," Terranova says, "we probably would have augmented their skill mix with somebody who could have helped to manage the launch."

Looking at a firm's portfolio and checking references to make sure it completes jobs on time and

Why I Picked My Web Consultant

E.P. Rogers, CIO, Mutual of New York (MONY), New York City

Project: Designing a corporate intranet.

Consultant: Propel Technologies Inc., Portland, Maine

Why: It had the best chemistry, and it had good client references. MONY would be an important customer for Propel, a small Web shop.

Advice: Make sure the consultant can handle emergencies, even after the site is up. When MONY announced its demutualization, the chairman wanted a press release on the intranet pronto, but MONY's staff had not yet begun doing its own updates. Propel delivered in an hour with just one phone call. "You have to have somebody who can be responsive," Rogers says, "because once you get this up, it becomes the lifeblood of the company."

Bernard C. Hewitt, head of Internet Trading, RS-Components, Corby, Northamptonshire, England

Project: Building an Internet trading site for U.K. customers, letting them order from a collection of 100,000 electronic, electrical, mechanical, and health and safety products.

Consultant: Cambridge Technology Partners, Richmond-Surrey, England office

Why: Web boutiques seemed too risky. Cambridge filled all of RS-Components' needs and was willing to work with software providers RS-Components had already chosen.

Advice: Don't be put off by price. "[Cambridge's] price was higher than any other contractor's, but their time scales were shorter and more certain," Hewitt says. "They hit every delivery date and hit every value and quality required."

Bill Folks, project manager, technology integration department, John Deere, Moline, Ill.

Project: Launching an external corporate Web site.

Consultant: Neoglyphics Media Corp., Chicago

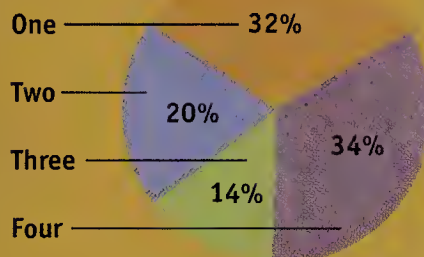
Why: It knew the technology and had already launched major corporate Web sites.

Advice: Evaluate whether you need someone with a marketing bent or a technical bent. Neoglyphics was more technically oriented, Folks says. For Deere's redesign, it will seek someone with more of a marketing focus. "They were right for that phase of our Internet development," Folks says of Neoglyphics. "Now we're looking at, 'What can we do to benefit from our [Web] presence?'"

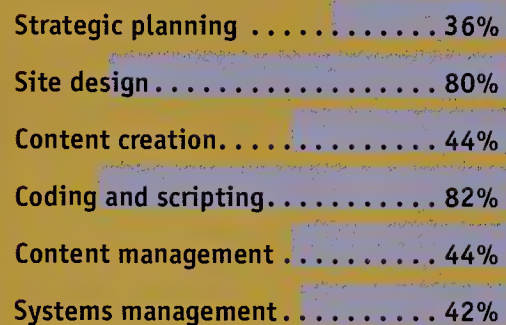
—S. Kalin

Who Looks Outside and Why

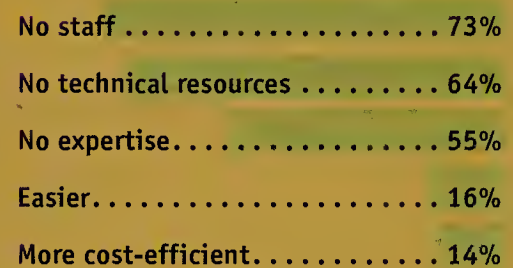
How many Web development firms do you employ?



What part of your Web development do you outsource?*



Why do you outsource your Web development?*



SOURCE: "MANAGING WEB DEVELOPERS," FORRESTER RESEARCH INC., CAMBRIDGE, MASS. RESULTS ARE FROM INTERVIEWS WITH WEB AND NEW MEDIA MANAGERS AT 50 FORTUNE 1000 FIRMS. *MULTIPLE RESPONSES ACCEPTED.

on budget are musts to make sure that firm can handle your job. You must also decide whether to seek a firm that has experience in your industry. In addition, Cambridge, Mass.-based Forrester Research Inc. recommends asking the firm's subcontractors whether it is easy to work with and professional. And you should find out whether a firm has a concrete project development and management methodology, and how it documents it. At Novato, Calif.-based Multimedia Live, for example, clients get a "design document"—a blueprint of the site development and launch process.

Write Contractual Ties That Bind, Yet Keep Your Future Flexible



The contract should spell out the site's specifications in detail—functionality, performance levels and operational requirements, says Gary Saidman, an attorney with Kilpatrick Stockton, an intellectual property law firm in Atlanta. The specifications should also include prototyping and testing, developmental stages that can then be used as payment milestones, says Saidman, who has advised clients on Web development contracts. If you're using more than one developer, their roles should be clearly delineated. Don't forget to specify who owns the hardware, software, code and content. And you may want to restrict what the developer can do with technology it has developed for you. When Radisson Hotels Worldwide hired Washington-based Magnet Interactive to design a Web site that would serve as an interactive tool, marketing medium and Web-based reservation system linked with its legacy systems, it asked Magnet to agree to not license the code to any of Radisson's competitors, says Rachael Marret, director of interactive marketing at Radisson in Minneapolis.

Make sure the contract lets you use and modify whatever your consultant develops, even if you do so with

another developer, Saidman says. Make clear who will be liable for copyright breaches, linking disputes or if a customer's credit card number is stolen. The contract should also cover what happens when you part ways—specifically, how will you make the transition to another agency or to taking the project in house? "Nobody can predict the future," Marret says, "including whether the interactive agency that fits your needs today will be the interactive agency that fits your needs tomorrow."

Remedy never signed a contract with Avalanche. Weaver says it was because it did not get Avalanche's technical specifications until late 1997; at that point, because of the project's problems, the company's lawyer advised it not to sign. Tyler, however, says Remedy and Avalanche were both responsible for agreeing on a scope of work—and the failure on both sides to do so led to the problems down the road.

Satisfaction Is Not Guaranteed



These tips may help you avoid Remedy's pain. But given that the Web—and the industry that has sprung up to help businesses take advantage of it—is still so new, there are no guarantees. So do your research. Get the right players involved in-house. Know what you want, and be vigilant to make sure the consultant delivers it. And keep those Roloids ready just in case. **CIO**

Senior Writer Sari Kalin can be reached at skalin@cio.com.

On Our Web Site

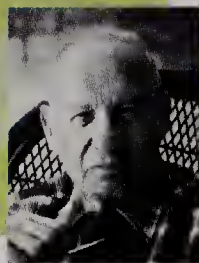
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October 4-7, 1998
Sheraton San Diego Hotel and Marina
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WEDNESDAY KEYNOTE



Peter F. Drucker

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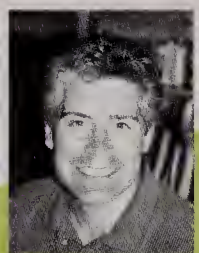
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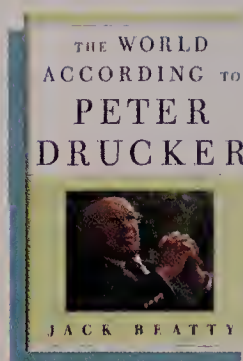
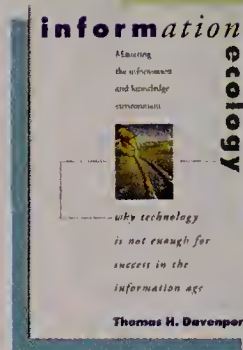
*Vice President
Director, Information Services
The Nature Conservancy*

CONFERENCE MODERATOR



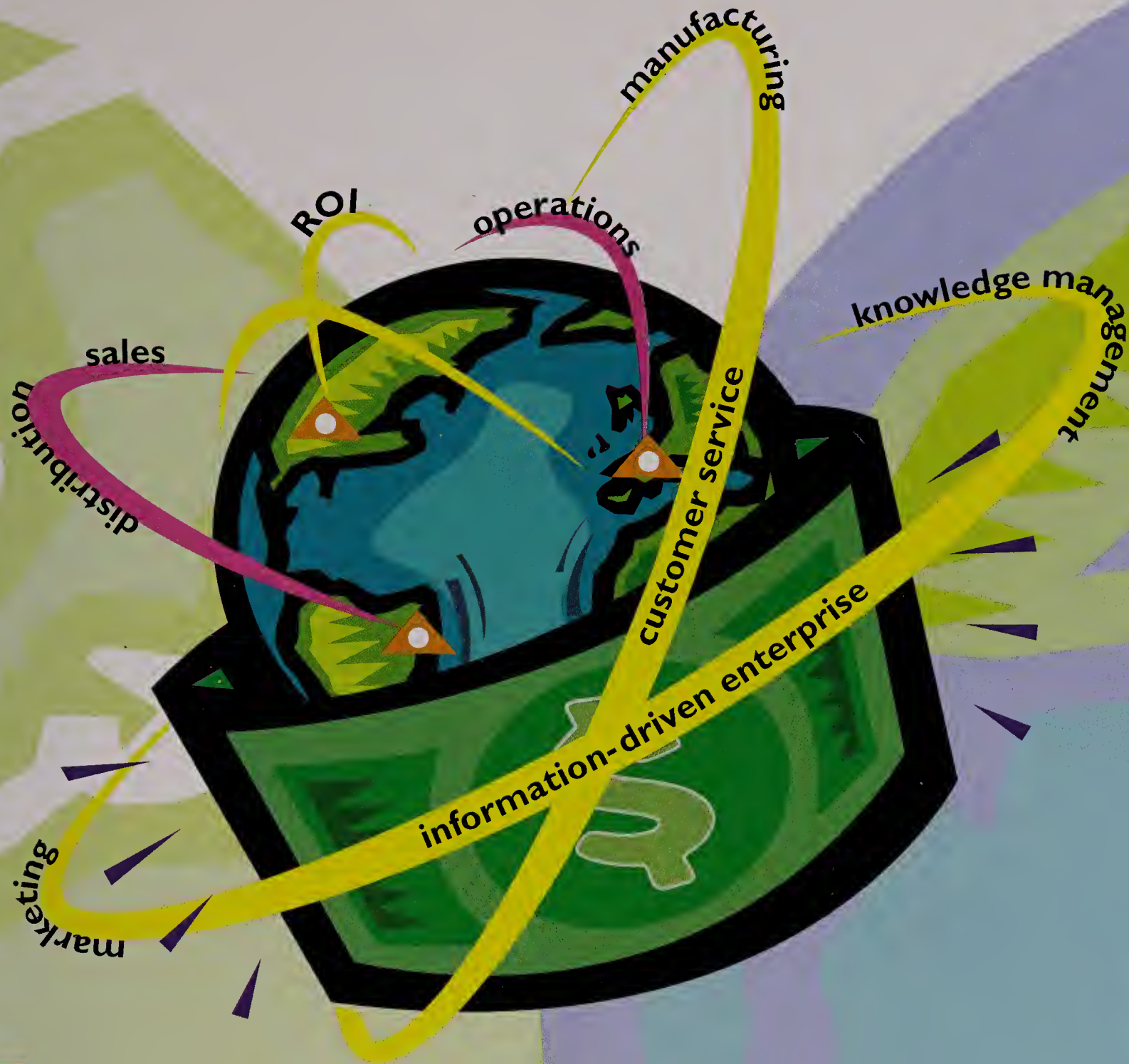
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Warren Bennis
University Professor at the University of Southern California
Author, *Organizing Genius*

The Value of Enterprise Information as Business Currency



Culture Shock

At the world's great museums, guardians of the past are meeting the technology of the future

BY ANNE STUART

WHEN ART LOVERS STROLL THROUGH the M.H. de Young Memorial Museum in San Francisco's Golden Gate Park, they see only 3 to 4 percent of the institution's treasures. As at other museums, space constraints require the de Young to keep the bulk of its treasures packed away, invisible to the public.

Except on the Web. There visitors can see more than 75,000 paintings, drawings, sculptures and other artworks held by the de Young and a sister institution, the California Palace of the Legion of Honor, collectively called the Fine Arts Museums of San Francisco. Eventually, the museums expect to make their entire 120,000-piece collection available for online viewing. And unlike the actual museums, the Web site charges no admission, remains open around the clock and, of course, doesn't require living in or visiting San Francisco.

Nobody believes the virtual museum experience can replace walking through an actual gallery any more than visiting *www.hawaii.com* matches the experience of stepping off a plane, donning a fragrant lei and walking barefoot on a warm beach.

"There is something to the real thing," says Ann

Mintz, executive director of the science center at the Whitaker Center for Science and the Arts in Harrisburg, Pa., and chair of an American Association of Museums media and technology committee. "The real desk where the Declaration of Independence was signed, a real picture that Monet painted—no matter how good your resolution is, no matter how great your interface is, there's no substitute." Still, Web evangelists see the Internet as a natural extension both for art and history museums whose experience is often based on the display of images and for science museums, which emphasize technology. True believers argue that Web sites can benefit their institutions in many of the same ways they help corporations: publicity, marketing, membership, education, research, recordkeeping, conservation and sales. Some benefits are already quantifiable. The Fine Arts Museums' leading-edge Web site has boosted sales of art reproductions and

Reader ROI

A VIRTUAL MUSEUM IS NO substitute for the real thing, but a Web site can help a cultural institution in many of the same ways it can help a for-profit business. In this story, learn how to

- Put archived artifacts to work generating interest and revenues
- Work through difficult issues of intellectual property and copyright
- Balance concerns about accessibility and quality control



ILLUSTRATION BY CHROOILEARY

earned more than \$100,000 in public and private grants. The Philadelphia Museum of Art and The Metropolitan Museum of Art in New York City promote their membership benefits online; the Met has also moved briskly into electronic commerce.

Others report less tangible benefits, such as expanding their reach.

"We're beginning to find that people from outside our geographical region are getting in touch with us through the Web site," says Guy Hermann, IS director and managing Web site editor at Mystic Seaport Museum Inc., an outdoor maritime museum in Mystic, Conn., and president of the Museum Computer Network. In time, museums' virtual vis-

itors may become paying customers, either visiting in person or buying gifts, reproductions or tickets online.

Skeptics—often in the same organizations—have for the most part stopped worrying that virtual exhibitions undercut admissions to real ones. But many remain unconvinced that the Web's benefits outweigh its headaches. They worry about quality, about how artworks or artifacts are displayed in this new medium. They worry about scale. How, for instance, can a two-story Calder sculpture be presented effectively on a 14-inch screen? They worry about cost, which can range from the Fine Arts Museums' relatively modest \$50,000 investment and \$25,000 annual operating cost to

million-dollar startup and annual budgets in some of the bigger institutions. And they worry greatly about intellectual property rights, fearing that somebody out there will steal, misuse, maybe even sell their online images—perhaps without the museum ever realizing it's happened.

Right now, because of poor image quality, online art heists for profit remain rare. (Would *you* buy a print of a Rembrandt made from a JPEG file?) But even with digital watermarking, institutions fear online thefts could increase as resolution improves. Meanwhile, even personal use may violate owners' rights. (See "Reproductive Rights," this page.)

Reproductive Rights

Museums with online collections or exhibitions can sum up their biggest fear in one word—piracy

Our museums are concerned about people ripping off their images," says Ann Mintz, chair of an American Association of Museums committee on media and technology.

Right now, digital watermarking and lousy image quality prevent most profit-motivated Web site thefts. People making bootleg T-shirts or posters are still more likely to simply lift high-quality pictures from prints, slides, art books or catalogs.

Still, people do illegally reproduce digital images in, for instance, banner ads, screen savers and software. Museums want to stop such activity. But they also want to sanction legitimate online displays, such as Web sites created for classroom use.

To that end, the Association of Art Museum Directors created the Art Museum Image Consortium late last year. AMICO (pronounced like "amigo") is assembling a giant digital library of images and associated documentation from museums in North America—and eventually worldwide—both to provide a centralized research archive for its members and to license those images for use by schools and universities.

Max Anderson, an AMICO founder and director of the Art Gallery of Ontario in Toronto, sums up the organization's mission this way: "Let's all get our act together about how we do collections management information, rather than just loading up our individual Web sites with content—which is, in effect, the least powerful way of using networking." Founders hope their database will not only achieve the balance between making art accessible and protecting owners' rights, but drive traffic to individual members' sites.

So far, AMICO has collected more than 20,000 images and documentation from 23 museums, and these are being licensed to 20 universities in the United States, Canada and the Netherlands. The Library of Congress, the U.S. Copyright Office and a variety of museum and art organizations have also endorsed the concept and are participating in its development.

—A. Stuart

ANOTHER AND PERHAPS MORE insidious obstacle is the longstanding cultural divide that often places museum staff in one of two camps: hoarders or sharers.

Most museums are, by definition, conservative. They exist to preserve traditions—and those traditions often include their own time-honored ways of doing what they do. Working within those boundaries or overcoming them to collaborate in new ways often presents a bigger challenge than implementing the technology itself. As Mintz puts it, "There's an intrinsic tension in the field between people who do the exhibits and people who promote them." Curators have traditionally been protective, even territorial, about the objects entrusted to their care. People responsible for copyright and intellectual property protection are similarly nervous about giving away the store, possibly illegally. Meanwhile, educators and PR types always keep an eye out for new ways to make the same items more widely available.

William Weinstein, IS manager of the Philadelphia Museum and himself a former curatorial assistant, sums up the dispute this way: "Curators want to do exhibits based on intellectual ideas. But they're told, 'We have to market it to get people into the museum.'"

Experience has shown a few museum staffs that the quickest way to resolve such disputes is for museum management to decree the Web site a top priority, instructing everyone to cooperate and manage resources in whatever way necessary to get the job done. That mandate,

however, means different things at different museums. Some offer little more than an online brochure with prices, hours, a calendar, a floor plan and maybe a few token images from the current

Rafferty, senior vice president for development and membership at the Met.

Some museums' online efforts complement rather than duplicate or highlight their physical holdings. For its

whose staffers wouldn't recognize each other if they passed on the street. "The cross-disciplinary nature of these projects is really new to everybody," says Weinstein, of the Philadelphia Museum.

"The curatorial staff tends not to be technologically adept. They don't think about IT at all. They would just as soon do their research on typewriters."

—An unnamed IT director

exhibition. Many want to "digitize," or digitally photograph, every item in their collections. Of those, some plan to make every image available online, including the 96 or 97 percent that haven't seen the light of day in years. Philosophy and finance drive these costly undertakings.

"We're a public institution," says Dakin Hart, assistant to the director at the Fine Arts Museums of San Francisco. "Our mission is to make the art accessible."

But Hart also says that making the images known is the best way to get them requested for reproduction sales. "People are requesting images of works they've never seen," he says. "That's because they have been in storage."

Other museums use the Web as a sampler, offering a look at those items on display in their galleries. The Met, which houses more than 2 million works of art, is discussing how best to represent its collections online; one proposal is that only 50 or so items from each of its 18 curatorial departments would be online at any one time. Both the Fine Arts Museums and the Met use the Web for publicity. The Fine Arts Museums e-mail URLs to reviewers so they can visit a specially created site that advises them about upcoming events, while the Met webcasts lectures and pushes museum news to *The New York Times* and various art magazines. And the Met's online gift shop and membership enrollment are performing well. In 1997, the gift shop earned more than \$100,000.

IN THE LAST YEAR, WE'VE DOUBLED the number of memberships we sold on the Web and we've doubled the amount of money we've received from the sale of merchandise," says Emily

"Best Dressed: 250 Years of Style" exhibition, the Philadelphia Museum Web site included some images of historic costumes, but focused more on illustrating how curators overcame a variety of challenges in preparing the fragile fabrics for display. Others, like the Walker Art Center in Minneapolis, have launched initiatives to commission "digital art objects," i.e., works with no physical counterparts. The Walker expects its first such commission to be displayed on its Web site later this summer, in conjunction with the artist delivering a live lecture about the work.

Then there's the ambitious National Museum of American Art, part of the Smithsonian Institution in Washington, D.C. The NMAA uses its site not only for displaying images from its exhibitions (most recently, a selection of Ansel Adams photographs), but for education and research as well. For schoolkids, the NMAA delivers Web-based educational content to schools. For scholars, the institution maintains an online database with details about more than 35,000 items in its collection, an inventory of American artworks in public and private collections worldwide and the first national registry of outdoor sculptures.

"We're moving toward getting the Web into all of our business processes," says Thornton Staples, chief of technology at the NMAA. The comprehensive approach is particularly critical for the NMAA, which will close its 160-year-old building in 2000 for at least two years of physical renovations. During its shutdown, Staples says, "the Web will be our only connection to our audience."

All those types of projects require an unprecedented level of in-house cooperation between museum departments

"You're dealing with lots of different people with lots of different ideas."

"Museum Web sites tend to grow up out of weird places, from someone's fanatical interest," says Steve Dietz, director of new media initiatives for the Walker and former chief of publications and new media initiatives at the NMAA. That someone might work in collections, publications, IS, design, media relations, marketing, or even the volunteer corps. "Once the museum sees it as an intrainstitutional priority," says Dietz, "everybody gets involved."

At some highly traditional history and art organizations, the research side tends to be, well, stuck in the past when it comes to appreciating the value of technology. "The curatorial staff tends not to be technologically adept," says one IT director, speaking only on condition of anonymity. "Generally," says the director, who has worked at two big-city museums, "they don't have computers at home, they're not on the Web, they don't do e-mail. They don't think about IT at all. They would just as soon do their research on typewriters."

Hermann, of Mystic Seaport, notes that museums tend to attract long-term—sometimes even lifetime—employees. Longevity can be a blessing and a curse: "The technology changes every 2 years and museum staffs change every 35 years. We just don't have the turnover and the fertilization that turnover brings to other industries," he says. "That knowledge is one of our capital assets. Yet those same people are used to doing things the way they've always done them."

Web projects move fastest, of course, in places where leaders not only support the effort, but champion it. NMAA

Director Elizabeth Broun views the Web as a key part of the museum's mission and says so on the Web site: "As a federal and national institution, it seems eminently appropriate that we use new technologies to offer our unmatched institutional resources to a broader segment of society." Internally, Staples acknowledges, "there was some low-level resistance" to Web projects at first.

But that changed with the clear management message moving them to the top of the priority list. "Now almost everybody in the museum has either bought into the idea or is resigned to it," he says.

As in business, that kind of top-down support is critical to success. "If we can't figure out a way for new media to be seen as strategic and integral, which is a top-down thing," says Dietz, "then it's a problem." But grassroots support is equally essential, he quickly adds: "To actually implement it, you look for your guerrilla fighters in other departments and band them together to get what you want."

How organizations decide what goes online varies as widely as what they actually display. At the Fine Arts Museums, the media-relations team selects images

"The Web is a sexy thing.
It's a new thing.
It has resulted in a lot of grant money."

—Dakin Hart

featured on the Web site to promote exhibitions, although they sometimes seek expert advice. "We run it by the curator beforehand and we honor what they say; they're the experts," says media relations assistant Zachary Ross. At the NMAA, curators are viewed as "content specialists," included in Web site exhibition planning from the start, often a couple of years in advance. Staples is now talking with curators about the Web component for two shows opening in 1999. "Increasingly, the Web is seen as an integral part of the exhibition process," he says.

Concerns about rights and costs remain the biggest roadblocks. "Most museums don't own the rights to what's in their collections," says Diane Zorich, a San Diego-based museum information management consultant. That means they must get permission from the artist or the artist's estate to display them. Some refuse. In one case, the NMAA obtained the rights to put an artist's work in the show and an accompanying book, but not on the Web site. In addition, museums worry that their own creations, the online exhibitions, will be stolen off their sites, either by amateurs curating their own online shows (as happened in a famous case involving the Louvre in the Web's infancy) or by people seeking to manipulate the images for fun or sell them for profit.

Web projects can be a tough internal sell at cash-strapped nonprofits, particularly when measured against other more urgent or tangible priorities. "People always say, 'Yes, but we need more money to take care of the boats first,'" says the Mystic Seaport's Hermann. Or opponents may argue for more traditional promotional, fund-raising and community-building efforts, pointing out correctly that at least two-thirds of the population isn't yet online. On the other hand, ambitious, innovative Web projects may help sell proposals for art, science or educational grant proposals. "It is a sexy

thing. It is a new thing," the Fine Arts Museums' Hart says of the Web. "It has resulted in a lot of grant money," both for Web-specific projects and those with a Web component.

Institutions that traditionally change at a Stone Age pace must also learn to respond quickly to users with Information Age expectations. That may mean quickly redeploying staffers or even hiring new ones, a scary thought for institutions that frequently rely on overworked staff, part-timers or volunteers to get work done when their schedules allow. If, for instance, they invite e-mail feedback or questions, senders expect replies in near-real time, no matter how overwhelmed reference librarians may be. "If they sent it by mail or called you on the phone, they would be perfectly OK if you got back to them 'in awhile,'" says Zorich. But when it comes to e-mail, "they will not accept a delay of several days or a week. It's an accelerated medium and people expect an accelerated response." That's exactly what happened at the NMAA, where the already overworked reference librarian suddenly found herself responsible for researching answers for upwards of 30 e-mails a day, a task so time-consuming the museum will probably have to hire at least one assistant.

Meanwhile, museums keep raising the bar. The Philadelphia Museum plans to sell exhibition tickets on its Web site. The Met will offer online fundraising and sponsorship options. The Fine Arts Museums will soon be offering a selection of works for print on demand and plans one day to implement technology allowing users to order custom-made postcards or posters from any work in its collection, not just the current exhibition. And they'll all keep looking ahead, knowing that their Web sites will always be works in progress. **CIO**

Managing Editor Anne Stuart can be reached at astuart@cio.com.

Finding It Online

Art Gallery of Ontario
www.ago.net

Art Museum Image Consortium
www.amico.net

Art Museum Network
www.amn.org

Fine Arts Museums of San Francisco
www.thinker.org

The Metropolitan Museum of Art
www.metmuseum.org

Museum Computer Network
world.std.com/~mcn

Mystic Seaport Museum Inc.
www.mystic.org

National Museum of American Art
www.nmaa.si.edu

Philadelphia Museum of Art
www.philamuseum.org

Walker Art Center
www.walkerart.org

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A man in a dark shirt is smiling and holding a power tool, possibly a sander or drill, in his right hand. He is standing in front of a large banner that reads "WEB TOOLS SALE". The banner is decorated with colorful balloons (purple, orange, black) and confetti. The background is a warm, orange-yellow wall. The overall scene is festive and celebratory.

WEB TOOLS SALE.

By sticking to core competencies,
CyberSource avoided competition
from major companies, according to
President and CEO Bill McKiernan.

Window of OPPORTUNITY

Building home-grown Web tools isn't a walk in the park, but marketing them successfully can be even tougher

BY DEBBY YOUNG

When credit card purchases are made without customer signatures—whether through the mail, over the telephone or online—merchants are left holding the bag for bogus transactions. In late 1994, San Jose, Calif.-based CyberSource Corp. learned that lesson the hard way when it launched software.net, an Internet software superstore.

Reader ROI

THIS ARTICLE EXPLAINS

- ▶ Why companies consider marketing home-grown Web tools
- ▶ The impact of selling home-grown tools on infrastructure
- ▶ Strategies that improve your odds for success

Within months, the fledgling enterprise was beset by a flurry of fraudulent credit card purchases that threatened to put it out of business.

CyberSource fought back by design-

Taking the Plunge

Before you dive into the unfamiliar waters of marketing your company's home-grown Web tools, ask yourself a few questions

Is the marketplace ready for the technology or service?

In 1995, Fisher Scientific International was at least two years ahead of the curve in the materials, resources and operations marketplace when it launched its Web-based catalog and commerce services. But with deep pockets and a visionary CEO, the company can continue financing its efforts until it turns a profit in the next year or two.

Is the product easy to implement and use?

CyberSource felt that the commerce application it developed would be too maintenance-intensive for customers to own, so the company packaged its offering as a service.

Does the product or service provide value?

Both CyberSource and Fisher Scientific were in the enviable position of having customers come to them for help.

Who are the competitors?

If it's difficult to differentiate home-grown products or services from others on the market, it could be extremely difficult to gain a foothold.

How can a recurring revenue stream be established to sustain the company?

CyberSource charges by transaction for its service, so revenue is ongoing. Studio Now continues to expand its product offering to new media channels. —D. Young

ing a sophisticated fraud screening program to mitigate the risk of online larceny. Not only did fraud losses shrink to less than half a percent of sales, other digital merchants began approaching the company for help with their own online trans-

"We created a much more reliable infrastructure than we probably would have if we were simply supporting a single internal customer."

—Bill McKiernan

action problems. The company's Internet Commerce Services business, which bears the CyberSource name, had annual revenues of about \$1 million in 1997.

If, like CyberSource, your company has developed some nifty tools for your Web site, should you market them to other Web shops and recoup some of your development costs? It might be a great way to bring in extra revenues. But as any marketer knows, there's a quantum leap between satisfying in-house clientele and meeting the needs of a host of external customers.

When venturing into the world of Web products and services, it's important to first consider the competitive arena. According to industry analyst Erica Rugullies of Giga Information Group Inc. in Cambridge, Mass., more than 600 electronic commerce products and services are on the market today, with more than 40 infrastructure product categories (like commerce servers, electronic billing and payment, and catalog and ad management software) alone. In a recent report entitled "Interactive Technology Strategies: The Internet in 1998," Forrester Research Inc. of Cambridge stated that each Internet product category ends up with between 20 and 60

overlapping offerings. As a result, most vendors of Web product offerings have fewer than 30 customers.

Even with such competition, the high-revenue potential continues to draw a flood of new vendors and products into the market. According to Michael Sullivan-Trainor, an industry analyst for International Data Corp. (a sister company to CIO Communications Inc.), the market for Internet-related services will reach \$13.8 billion by the year 2000, with Internet software ringing up \$12.2 billion in sales.

But before any company starts counting profits, Rugullies cautions that selling software or services is a risky business for those who don't have experience in this area. Significant infrastructure investments for technical support, sales and marketing are often required. And it can be tough to keep an eye on what the competition is up to given the Internet's constantly shifting landscape.

Still, if you're convinced there's a window of opportunity out there for your home-grown Web tools, find out what it takes to make a go of it from three companies that have gone down that path.

CyberSource

From Online Store to Online Transaction Services

CYBERSOURCE CORP. (www.cybersource.com) made a big investment in technology and infrastructure when it launched software.net (www.software.net), its online store. After numerous incidents of fraudulent purchases, CyberSource developed its own screening system that flags suspicious transactions based on known risk factors. Someone who

provides a name and e-mail address that bear no resemblance to each other, for example, will get nabbed by CyberSource's screening technology.

CyberSource's development efforts paid off. By the end of 1997, software.net sales climbed to about \$17 million. As revenue streamed in, so did requests from software publishers, resellers and distributors to leverage CyberSource's technology and expertise. "After about a half-dozen meetings with major companies, we realized that there was a business opportunity here," states Bill McKiernan, president and CEO of CyberSource. Since the initial screening program, CyberSource has ventured into other transaction-based offerings including real-time credit card processing, export management and multicurrency payment processing.

CyberSource first thought of stripping the software.net server and marketing it as an unpopulated server that customers could load with their own software product offerings. But that business model was rejected in favor of selling CyberSource's commerce applications as services and giving customers access to them via the Internet.

McKiernan cites several reasons for the decision. First, the company felt its core competency was in back-office transaction processing, including such activities as credit card validation services and electronic product distribution. The company didn't want to compete with major companies like Microsoft Corp. and Netscape Communications Corp. that were well-entrenched in the business of selling merchant servers. Second, back-office services change so rapidly customers would have a full-time job trying to keep their electronic commerce applications current. The federal government, for example, changes export restrictions on software and other products almost daily. Screening for fraudulent credit card usage is equally volatile. CyberSource continually updates its lists of countries and individuals restricted from buying certain software products as well as its profiles and database of credit card fraud perpetrators.

By linking their Web-based transaction applications directly to these services for around a dollar per transaction, online merchants can take advantage of technology that CyberSource spent millions of dollars developing. "That value proposition resonates to customers," claims McKiernan. Within nine months of launching its Internet commerce services, CyberSource landed an impressive list of clients including software publishers such as Microsoft, Symantec Corp. and Adobe Systems, and software resellers like Programmer's Paradise and Software Spectrum.

But going from supporting a single internal customer to supporting more than 225 accounts wasn't a trivial leap. In order to increase availability and reliability of its services, CyberSource had to beef up its engineering resources. The company also added redundant data centers in both the United States and the United Kingdom. "We created a much more reliable infrastructure than we probably would have if we were simply supporting a single internal customer," says McKiernan.

President Alex Sheshunoff transitioned **Studio Now** from a consumer company to a business-to-business enterprise.

CyberSource then had to assemble an entirely separate sales and marketing team to reach prospects with its transaction services. It took the company nearly a year to build the necessary infrastructure to launch the Internet commerce services business. As of March 1, software.net accounted for over 85 percent of the company's revenues; in 1997 alone the Internet services division generated \$1 million. With such an impressive start, the company has split into two autonomous corporations in March 1998: the *software.net* online store and CyberSource, which handles the Internet commerce services business.

As for competition, McKiernan believes that new entries into the market for Internet commerce services will take at least a year or two to figure out all the nuances of electronic software distribution and other digital commerce applications. With customer accounts projected in excess of 400 by year's end, it will be that much harder for latecomers to gain a foothold in the market that CyberSource pioneered.

Studio Now

From Online City Guide to Interactive Content Tools

IN JUNE 1996, New York City-based Studio Now (www.studionow.com) launched New York Now, a highly interactive, online magazine about life in the Big Apple. The site's humorous, opinionated guides to New York quickly drew major audiences in an already crowded market. Advertising



VALUE-ADDED PROPOSITIONS

space consistently sold out to such household names as Procter & Gamble, Sony Electronics and The Walt Disney Co. Today, New York Now serves as a showcase for the development tools Studio Now licenses to media companies around the globe.

Customers can choose from a variety of plug-and-play modules to help them quickly add traffic-building content to their Web sites. These interactive packages range from a comparison shopping guide to restaurant reviews and a database of local charities.

"The real transition for us as a company was going from building and maintaining a consumer product to a business-to-business product," says Alex Sheshunoff, president of Studio Now. To avoid taxing its limited resources with extensive customer support, Studio Now needed to redesign the modules to be as maintenance-free as possible.

Marketing has been very different, too. The company targets a wide audience by advertising in local movie houses to draw Manhattanites to New York Now. In the business-to-business realm, the target market is more focused. With 2,400 newspapers online in the United States and 4,700 online in the world, Studio Now knows the precise identity of potential customers. The same can be said for future target media including television and radio stations and magazines.

Originally, Studio Now planned to expand its virtual magazine from city to city on its own. But when Microsoft announced Sidewalk, the company decided to rethink its expansion strategy. After several brainstorming sessions around its ping-pong-meeting-table hybrid, Studio Now decided to concentrate on what the company did best: conceptualize and create interactive content tools.

Today, Studio Now piggybacks on the distribution channels of existing content publishers (newspapers, television and

latter was dropped from New York Now and never introduced for licensing.

Today, licensing of the interactive content modules accounts for 90 percent of Studio Now's revenues. The company continues to use New York Now as a proving ground for new tools. Its most recent test is Town Hall, a virtual town meeting for voicing opinions as well as for writing, signing and submitting petitions to local officials. With minimal modification, Studio Now thinks this module could be extended into the business community as a virtual stockholders meeting.

Fisher Scientific

From Laboratory Equipment to E-Commerce

TO HELP ITS SUPPLY CHAIN become more efficient, Fisher Scientific International began posting its catalog of laboratory equipment and supplies on the Web in December 1994. Customers could log onto the Fisher site (www.fishersci.com) and find technical details about any item in Fisher's catalog from beakers and pH meters to chemicals and advanced instrumentation products. By March 1996, the Hampton, N.H.-based company had enhanced its site to include online ordering.

"It was clear we had a commercial opportunity here," says Tom Evangelista, a 25-year veteran of Fisher Scientific and currently vice president of business development for Fisher Technology Group (FTG) (www.ftechg.com), based in Pittsburgh. Fisher Scientific invested nearly \$15 million honing its vision of a virtual distribution site. In 1995, based on internal advice and customer interest, the \$2.2 billion manufacturer and distributor decided to spin off FTG as a separate business

unit to extend this concept of Web-based commerce to organizations not affiliated with Fisher Scientific.

"Customers who buy these kinds of applications want to deal with a software company or a solutions provider, not a distributor that is providing a solu-

tion as long as you buy their products," explains Evangelista. For the concept to succeed, FTG had to become a company that could support multiple vendors with an enterprisewide cross-commodity solution.

In August 1996 FTG launched ProcureNet (www.procurenet.com), a public Internet mall for buyers of maintenance, repair and operations (MRO) laboratory and safety products. The Web site opened for business with 10 suppliers. Today, ProcureNet hosts more than 90 suppliers, with another 30 under contract to begin developing electronic storefronts. In addition to providing easily navigable, information-rich vendor catalogs, the electronic storefronts interface via EDI and fax with supplier order entry systems. FTG develops custom interfaces to legacy systems order entry, customer service and inventory to handle the complete purchasing process.

In 1997 FTG decided to package ProcureNet's underlying technology into CornerStone, a software application for both ends of the supply chain. Buyers of goods and services can use CornerStone to create supplier catalogs on a corporate intranet and allow employees to get product quotes and technical specs

"As a developer of a local content site, we've learned a lot about what works and what doesn't on the Web."

—Alex Sheshunoff

radio stations, satellite and cable operators). For instance, when Studio Now landed the S.I. Newhouse account, it gained entrance into Alabama Live! the online site of three Alabama newspapers: *The Mobile Register*, *Birmingham News* and the *Huntsville Times*. It has also added Cablevision to its roster of customers, doing broadband adaptations of its current set of publishing tools. "Increasingly, electronic publishers are appreciating the time and expense associated with developing interactive content. In order to offset these costs, organizations are starting to look into packaged solutions," Sheshunoff says. Studio Now charges customers variable rates depending on market size and share of advertising revenue.

To establish the traffic-building potential of any module, Studio Now first tests it on New York Now. "As a developer of a local content site ourselves, we've learned a lot about what works and what doesn't on the Web. Before we make an application available for license, we try it here first," says Sheshunoff. He contrasts the popularity of Studio Now's restaurant guide, which users felt was a great source for tips on local eateries with an e-mail reminder service that failed to catch on. The

Relationships and
channel partners
will make **Fisher
Technology Group**

a survivor, predicts
President Bill Van Etten.

from their desktops. Suppliers can use CornerStone to build Web sites ready to support electronic commerce.

When it came to marketing CornerStone, FTG first had to do a bit of education. Most buyers and suppliers hadn't modified their business process to facilitate electronic commerce. As a result, FTG spent a lot of time helping its beta customers Web-enable their business data and then establish consistent business processes to use that data effectively for procurement.

Targeting the right people at potential customer sites proved to be another challenge. "We were initially selling at the wrong level," says Bill Van Etten, president of FTG. "We were selling at the purchasing manager level. That really isn't high enough." Experience taught FTG that the push to get on an electronic commerce track had to come from an organization's senior management.

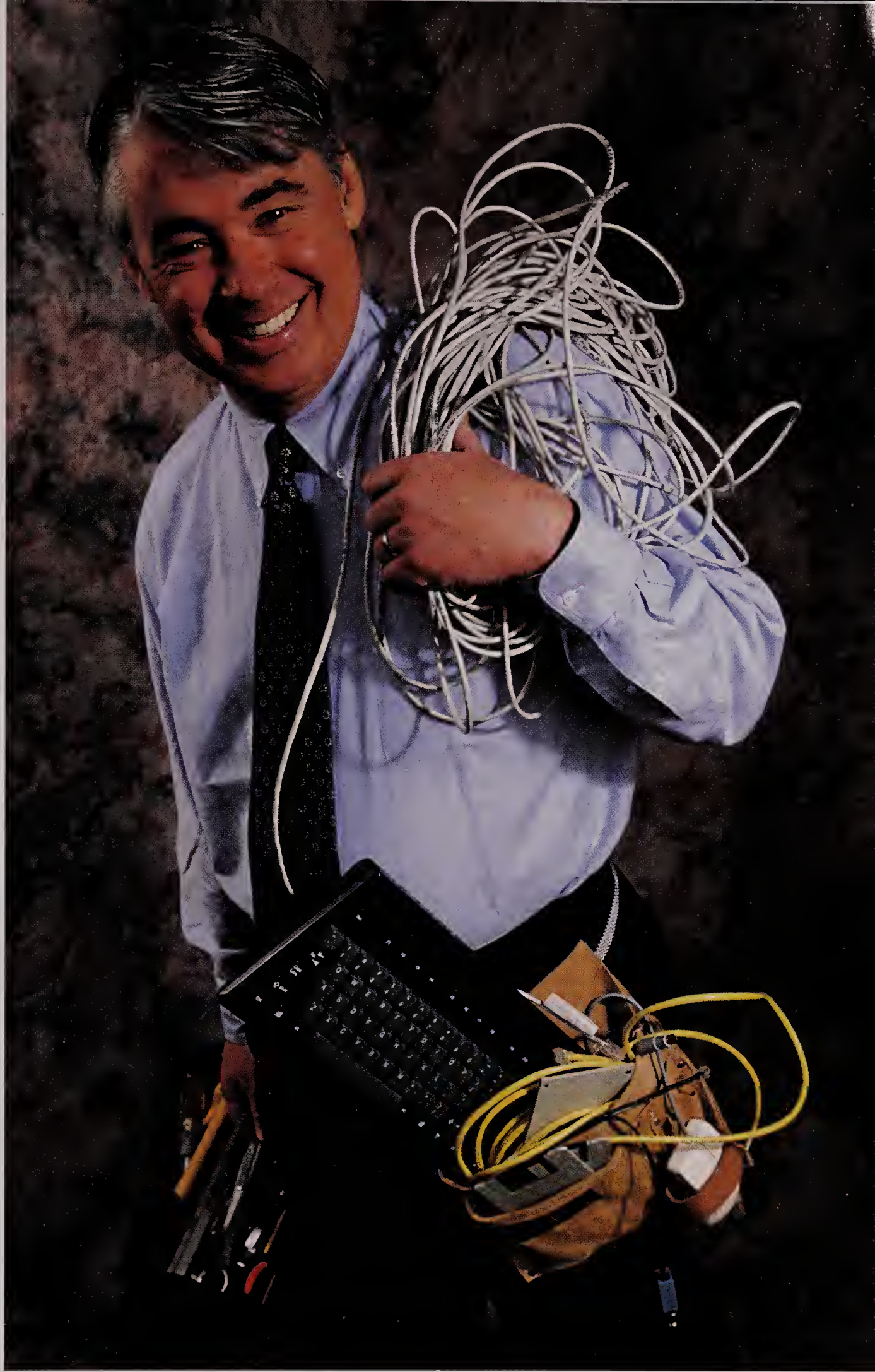
To gain access to the right individuals within a company, FTG made a comarketing agreement with IBM Corp. to market its Web procurement software. IBM is also bringing enterprise resource planning (ERP) vendors into the process with the ultimate goal of bundling CornerStone into their distribution software solutions. In addition, FTG, as part of Oracle Corp.'s CAI program, has an agreement with Oracle to integrate CornerStone with Oracle's financial applications.

While FTG doesn't expect to be profitable until 1999, Van Etten feels the company's experience working the entire length of the supply chain gives the company a decided advantage over others in the Web-procurement arena. "We suspect that this market is eventually going to consolidate. But because of the relationships and channel partners we have, we think we'll be one of the survivors," predicts Van Etten.

Before any company decides to market its home-grown Web

tools, the first task at hand is to nail down an objective. Is it a question of merely recouping development costs? Or perhaps a company has visions of being the next \$2 billion Web start-up. In any event, it's important to set realistic goals and legitimate milestones at the outset. And it doesn't hurt to pray that a major player like Microsoft will refrain from marching in and inhabiting a similar niche in the market. **CIO**

Debby Young is a freelance writer based in Framingham, Mass. She can be reached at dscribe@erols.com.



CUSTOMER INTERFACE

Building Bridges

Marketing and IS haven't always gotten along. But when it comes to the Web, the two groups need to bury the hatchet and work together.

BY JIM STERNE

IN THE BEGINNING, THE INFORMATION TECHNOLOGY PEOPLE discovered the Internet. They found it was easy to create a Web site...and they did. Six months later, the marketing people discovered the World Wide Web and were shocked and appalled that the IT people had been representing the company to the world. They responded by snatching control of the Web site and loudly proclaiming ownership.

Soon, however, the marketing people learned that a decent Web site is more than just an online brochure. Marketing needed the help of technology people to turn the Web into an interactive medium. At most companies, this launched a new era.

The IS department has typically reported up the chain through operations or finance. Marketing has typically reported to the president or CEO. The two departments used to cross paths only at the annual company picnic.

Now, thanks to the Web, marketing and IS must work together. They have to make their needs known and create the foundations of a working relationship. It won't be easy. But it starts with common goals and a willingness for each group to imagine themselves in the other's shoes.

MEMO

Date: June 1, 1998

To: Vice President of Marketing

From: CIO

Re: Our External Web Site

We've learned a lot in the three years we've had a Web site up and running. But if we are to take advantage of the Web and work closely together, the marketing team needs to understand a few things about the technology and the process of Web site development.

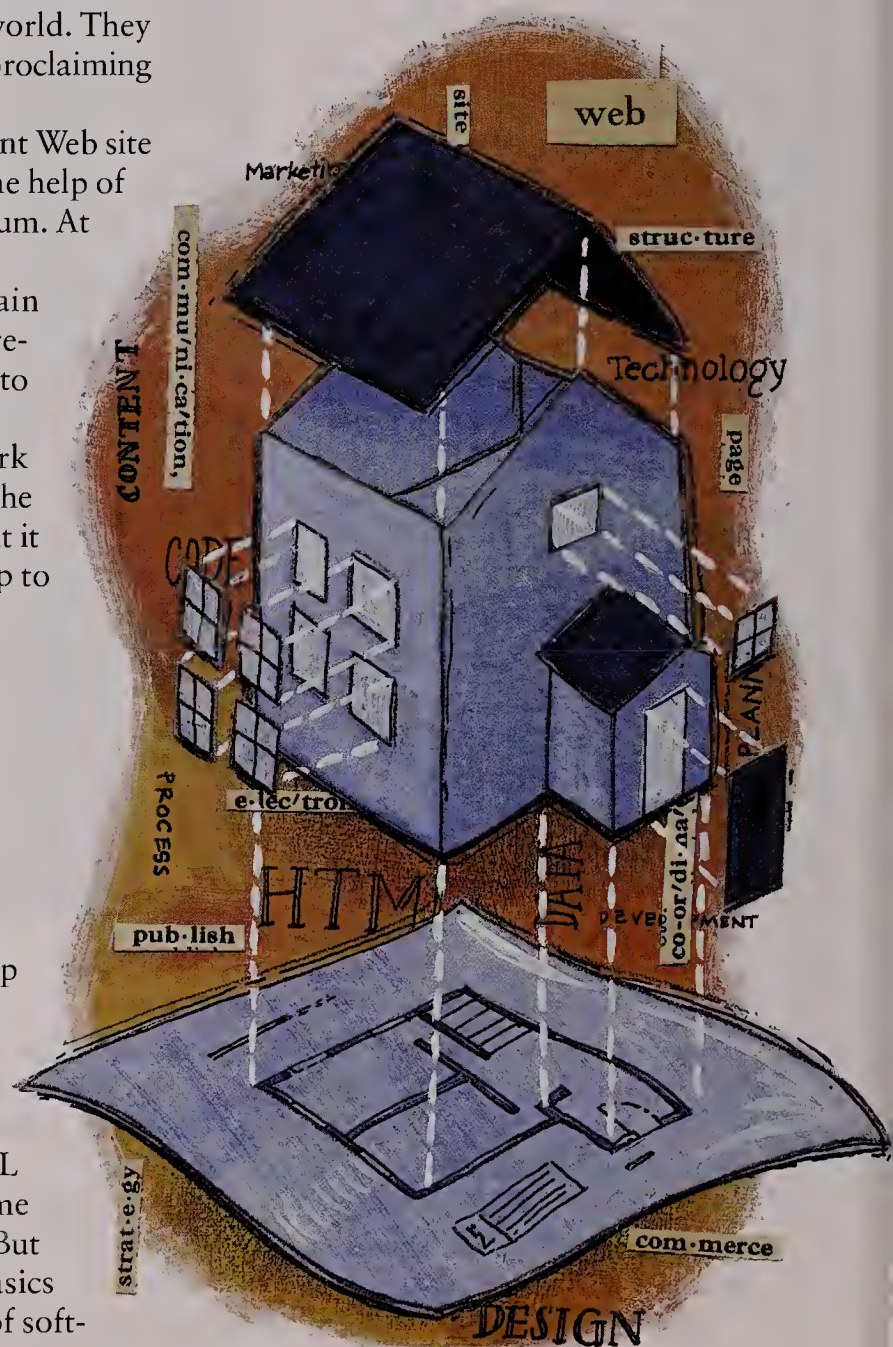
A Web site is frighteningly easy to create. A little HTML goes a long way, and everybody who has a teenager at home knows that a Web site can be created in a couple of hours. But get the least bit fancy and the magic fades because the basics behind a sound Web site go hand in hand with the basics of soft-

ware programming.

If you want the site to be bulletproof, to collect information properly and to dynamically serve personalized pages, we can deliver. But we need help from you.

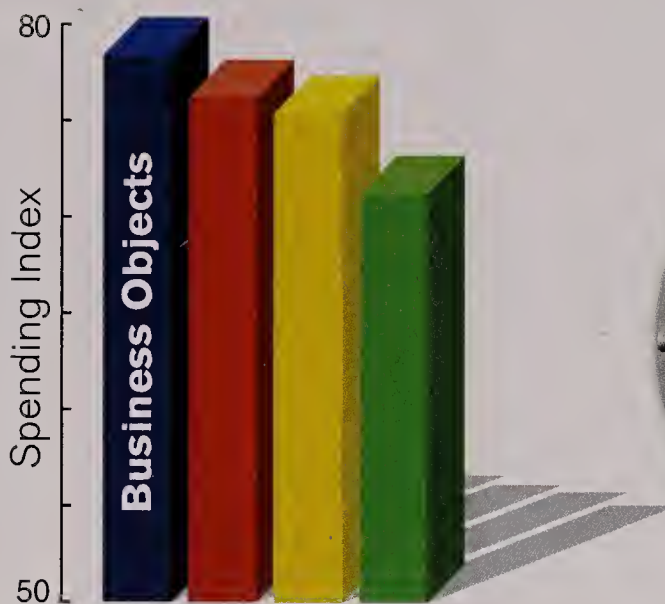
Think of the IS department as the builders of your home. We have architects, we have supervisors, and we have people who are good at concrete, framing, electrical, plumbing and wall-boarding. You have an idea of how many rooms you want and where you want them, and you want to take care of the interior design.

The coordination between all involved in construction takes good timing and





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tions for the coming year. And Database Programming and Design Magazine recently named Business Objects one of its "Database Dozen" industry-shaping companies for 1998.

Maybe we're getting this recognition because we've been delivering what customers want in a decision support solution—scaleability, integration, deployability, and ease of use. Or maybe it's because we're making the transition to the web easy, by leveraging a shared metadata infrastructure for both full and thin clients.

Either way, isn't it worth it to learn how Business Objects can help you deliver decision support to your enterprise? Get a free copy of our white paper on scaleable enterprise decision support. Call us at 1-800-527-0580 ext. 168. Or visit us at www.businessobjects.com/awards.

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*Soundview Financial Business Intelligence Spending Survey, November 1997

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strong communication skills. If the concrete gets poured before the plumbing is installed, there will be problems. The same goes for the Web. We have established specific procedures for how new

are building multiple houses for multiple types of customers. It is our job to find out what sort of house each customer wants to live in and then create a description of that house that's so com-

- Refrain from dabbling in experimental technologies.
- Outsource only those tasks that will not compromise the integrity of our data center.

The Web offers an opportunity to transform the company into a new type of organization.

content gets hosted on the server to ensure we don't finish the walls before the electrical conduit has been installed.

Adherence to these procedures is paramount to the timely success of each project.

That's why we require functional specifications documentation.

Like builders, we need to create architectural drawings from which to work. If we don't have an accurate survey of the land, the resulting structure will not be built to code, and you won't be happy living there. To help make our working relationship better, I pledge that we will

- Keep you informed as to all changes in our completion estimates.
- Ask sufficient questions so that we can go about our work without interrupting you.
- Explain to you that what you are asking for is either easy, hard or beyond our reach.
- Stay educated about the best tools and techniques for getting the job done.
- Make it as easy as possible for your people to maintain their own content.
- Create standards and procedures that work best for all members of the Web team.

Together we can create a trustworthy Web site that is both a testament to good, solid software engineering techniques and a communication tool we can count on.

MEMO

Date: June 1, 1998

To: CIO

From: Vice President of Marketing

Re: Our Web Efforts

Thank you for today's memo. I, too, want to work together with IS and get the most out of our Web efforts. For that to happen, it would help if the IS department had a clearer idea of what marketing has to deal with on a day-to-day basis.

To use your construction analogy, we

selling the customer will fall in love with it.

Like you, we move from project to project with changing requirements and tight deadlines. We also work in an arena where the competition is actively out to make our houses fall down. As such, we sometimes have to respond in very short order.

If the marketing team discovers a new marketplace metric or suddenly faces a new competitive product, the response must be swift and sure. A new brochure can be designed, printed and delivered into the hands of tens of thousands of prospective customers within a few weeks. But the moment we issue a press release announcing our new strategy or product, prospective customers will come knocking on our Web site. We have to be ready for them.

To remain competitive in this electronic world, we must find better and faster ways to communicate with the public. We also have to educate our front-line staff and publish critical information at a moment's notice. I'm trusting that the IS department will come up with the ways and means to empower the rest of the organization to use the Web effectively.

In addition, we need the Web to deliver things that traditional marketing techniques can't. We need precise numbers: the hits, the page views, the sessions, the click-throughs, the travel paths, the logons—all of which tell us whether we're doing a good job. We need them daily, and we need to be able to drill down and slice and dice them every which way we want.

To help the company use the Web as a competitive tool, I pledge that the marketing department will

- Maintain structure by adhering to regularly scheduled updates.
- Use the given tools to make content changes without interrupting the IS department.

- Avoid promising new features to customers before they can be delivered.

Together we can create a vibrant Web site to foster building electronic relationships with our customers.

MEMO

Date: June 1, 1998

To: CEO

From: CIO and Vice President of Marketing

Re: Our Web Efforts

The Web represents new possibilities for reaching new markets, servicing our current customers and conducting business in whole new ways. Marketing and IS are finding ways to use the Web for furthering the stated goals of the company. But the more we study the Web phenomenon, the more we realize that the Web offers an opportunity to transform the company into a new type of organization. At the same time, the Web represents a real threat that our competitors (and others we don't think of as competition) are enabled to change and adapt before we do.

The Internet can dramatically change the dynamics of our industry. Along with the ability to conduct commerce at the speed of light comes the ability to establish new strategic alliances, deliver new services and create new value chains.

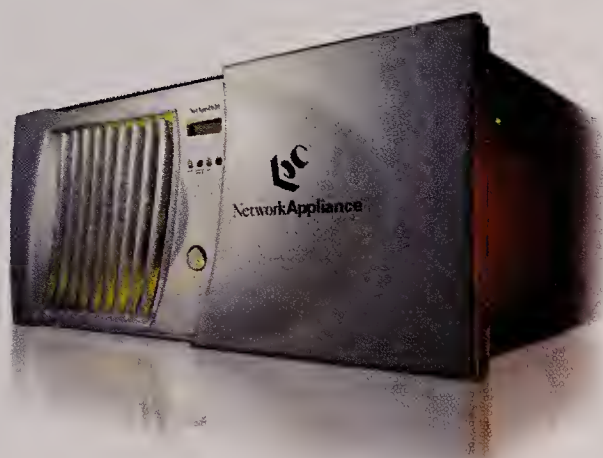
The majority of our efforts to date have been off the books and off the clock. As the time comes to implement our new ideas, we require two things from you: a clearly defined statement of corporate direction for the Web and a formal commitment in terms of budget and organizational structure. **CIO**

Jim Sterne is the author of What Makes People Click: Advertising on the Web. He can be reached at jsterne@targeting.com.



Every once in a while a product comes along that is so well designed, reliable and simple to use, it defines a category. Add to that list the network appliance from the company named Network Appliance. It's designed from the ground up to do one thing: serve data.

To see how well we can satisfy your need for UNIX, Windows/NT and Web file service, browse through our website, then hold us to the fire of your network. Nothing beats an original. And for as long as we've been making network appliances, nothing beats a Network Appliance.



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If speed is what your Web server needs, try throwing a little cache at the problem

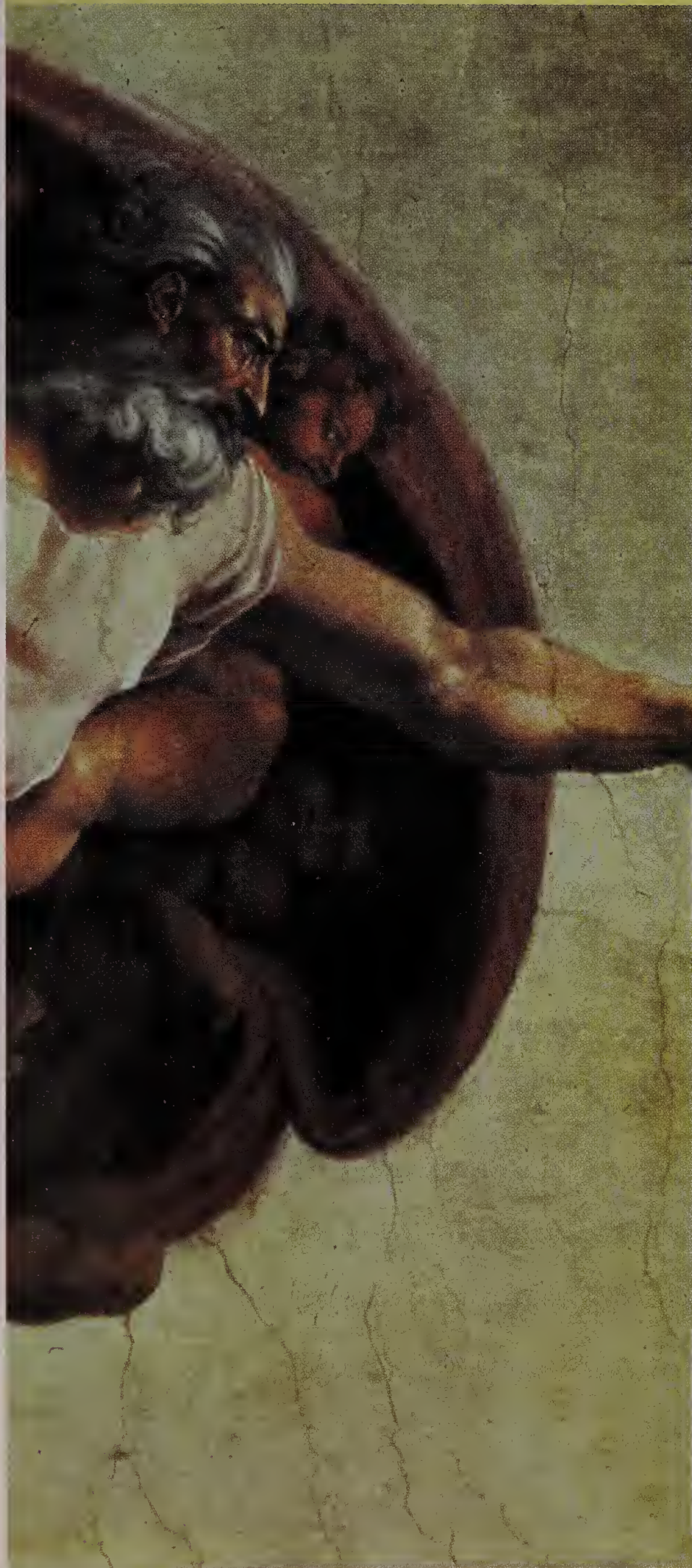


What's Caching?

Besides making you feel guilty about your checkbook, this example highlights three important fundamentals about caching: First, caching never changes the final output. If you balanced your checkbook every month starting from day zero, when you were done, you'd have the same answer as when you started with last month's closing balance. Perhaps you'd have less hair. But the final number would be, should be, the same. Next, caching generally speeds how quickly you get the final answer. If it doesn't offer at least the promise of speed, why bother? Balancing a single month's worth of checks will take far less time than balancing several years' worth, so you keep a running balance. Finally, past results can't change (or become stale, in cache lingo); if they could, the cache couldn't be trusted. This

Graphic
Wizardry
Page 68

PLAY GOD.



It's Tuesday morning. The Asian market lost 20% of its value overnight. The US market opens in 10 minutes. You've just deployed your on-line trading system.

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month's checks shouldn't change last month's balance, so you can safely start from last month's final sum.

Web caching, of course, is a little more complicated than your checkbook but not a whole lot more. And the same general concepts apply. Unlike a checkbook, which caches a single number, the Web has multiple caches, and each remembers multiple results—in clients, in Web servers and in intermediate servers, such as proxies and firewalls along the way. Each player in the game caches pages as it fetches them so that it won't have to fetch them again later. But that's where it gets interesting. How many pages should be remembered? "All of them" is an impossible answer, so which pages are forgotten and when? Are some caches more effective than others? Will dedicated machines help? Will specialized hardware and software help? Do they justify the additional cost?

Fortunately, these return on investment questions start out easy, since the benefits of caching far exceed the costs, especially if you're already running more modern Web servers. They eventually get harder because the costs accelerate faster than the benefits do, but in certain situations the advanced solutions are still justified. They just pay off more slowly.

How Much Cache?

The good news about caching is a little goes a long way. Simple caching schemes will boost performance dramatically. The bad news about caching is you need to invest more effort, hardware and brainpower (in the form of more complicated caching schemes) to get further enhancements. Initially, some simple caching is a big win. To keep winning, however, gets harder and harder until the cost isn't worth the benefit.

But there are a few slam dunks. First, turn caching on! Most servers install with caching turned on, but it's always worth double-checking. Next, remember more. Most caches allow the webmaster or systems administrator to allocate more or less memory to the cache. Memory is cheap and bandwidth is expensive, so jack up the cache size. If you don't have enough memory in the server box, purchase more. If your Web server is competing for memory space with other services, move the server to its own box, one with copious memory. All this holds true for Web browsers too, although it's a little harder to install new memory on all those desktops. But good caching on the

More Alphabet Soup

ADSL promises to minimize clogs in the Internet pipeline

JUST WHEN PEOPLE ARE starting to learn that ISDN stands for integrated services digital network, they've got to cope with another four-letter acronym: ADSL. Unlike ISDN, however, ADSL—an abbreviation for asymmetric digital subscriber line—just might transform telecom services, particularly Internet access and telecommuting.

In a nutshell, ADSL is a modem-based technology that uses the existing, twisted-pair telephone infrastructure to deliver high-speed digital information. Interactive video and high-speed data communications—such as Internet access—are the major applications where ADSL can be deployed.

As the A in its name suggests, ADSL allows different data transmission speeds depending on which way traffic is moving. Data is delivered downstream (to homes and offices) at speeds ranging from 1.5Mbps to 8Mbps; data moves upstream (to the Internet or service provider) at anywhere from 64Kbps to 1.5Mbps. This asymmetrical aspect is ideal for home-based Web users, who generally make a brief request to a Web server for large amounts of data in return. In addition, ADSL modems are always on, eliminating the need for users to dial in to a phone number that may be busy.

In practical terms, ADSL promises to reduce the bandwidth crunch threatening to crimp the growth of the Web,

according to Gary Kessler, vice president of information technology at Hill Associates Inc. (www.hill.com), a voice and data tele-



communications training and education company in Colchester, Vt. "The growth of the Internet and the Web has taxed the existing telecom infrastructure because people aren't making five-minute phone calls; they are logging on for hours at a time," Kessler says. With ADSL, voice, data and video traffic are separated; data is routed around a local telecom switch, which is then free to carry only voice. The end result: fewer clogs in the Internet pipeline.

Telecom giants, including Bell Atlantic and U.S. West, have announced ADSL service offerings to both commercial and residential customers.

For more on ADSL, including vendor information, visit the Fremont, Calif.-based ADSL Forum at www.adsl.com.

—Megan Santosus



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Harley-Davidson, Chevron, Polk Audio—these are just a few of the varied companies who've turned to USWeb to gain a competitive edge. And we can do the same for you. We provide custom business solutions—from strategic consulting to architecture planning through complete implementation. Whether it's for an Internet, Intranet or Extranet.

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desktop will save your network bandwidth considerably.

Although it's a little less obvious, proxy servers, in addition to protecting your intranet from intruders, can also cache external pages. Because many proxies are connected to the public Internet through slower wide area communication connections, even dial-up lines, caching here can actually dramatically improve browser responsiveness for those inside the firewall. Proxies, of course, are really Web browsers and Web servers rolled into one: They fetch pages on your behalf when given a URL, and they often hide your identity (such as your IP address) along the way. So all the simple fixes for Web

Wherever there's a dramatic drop-off in the network bandwidth, a caching proxy will improve performance.

servers listed above work quite well with proxies, too. But don't stop there. Proxies, beside securing Web traffic, also concentrate it. So many companies now place proxies in front of their wide area connections (on both sides) within their intranets and turn the security monitoring either down or entirely off. Wherever there's a dramatic drop-off in the network bandwidth, a caching proxy will improve performance. Although you'll have to crank some numbers to get the precise payback period for you, since wide area links often serve many users and are expensive, the break-even point will probably be measured in weeks or even days.

These are the quick wins. Turn it on. Turn it up. Throw memory at the boxes. Michael Jordan couldn't do better. You'll win the opening quarter big. But you may want more. So what next?

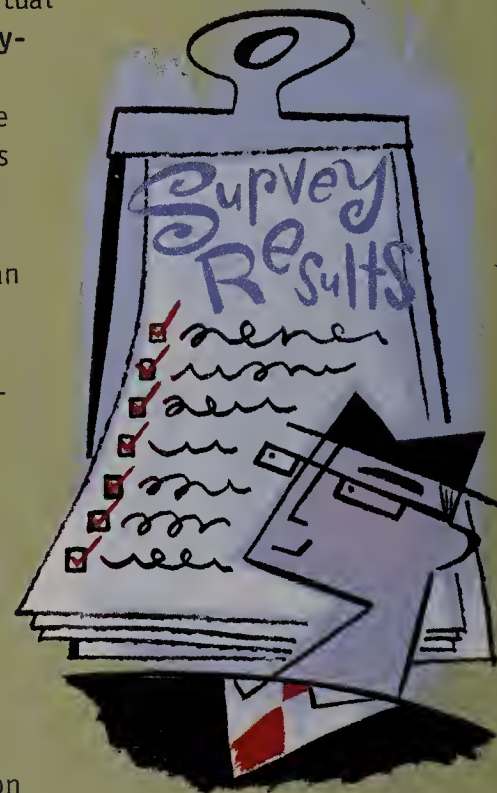
Remember in our checkbook example we assumed that each month's closing balance didn't change? Each Web cache makes the same assumption, but it's more difficult to enforce and harder to recognize when the rule is broken. HTTP 1.0 wasn't very clear about the rules for caching and timing out pages. What's time out? Since pages change, they should be cached only for a particular period of time. For static pages, often the caching lifetime or time-to-live should be long, perhaps days. For dynamic pages that change often, the time-to-live should be short, perhaps minutes. In some cases, for pages generated on the fly, possibly through CGI scripts, the pages shouldn't be cached at all. The latest revision of the HTTP protocol, HTTP 1.1, is much clearer about caching in general and time out in particular and makes the caching algorithms more accurate, especially on the desktop. So if you don't use HTTP 1.1 now, start using it. Your network manager will thank you for it. But to fully enjoy the benefits of HTTP 1.1, you must be disciplined about setting time-out values and discerning about their lengths. Different pieces of your Web page, such as images, should have different time-out values, since they age differently. You can cache pieces of pages without caching the entire page and still improve performance. But it requires new ways of thinking and explicit work on the part of the webmaster and the content author.

Unfortunately for Web designers, application developers and IS, this is one more factor to keep in mind during the cre-

BROWSER

Just a Few Questions

You probably care about what your customers think. But you probably don't want the fuss and muss of owning and running your own Net survey software. If that's the case, check out Virtual Architechs LLC's **Survey-Builder.com** (www.surveybuilder.com). The self-service system lets companies design a customized e-mail or Web-based survey on an intranet, extranet or the Internet. Creation of the survey, data collection and data processing all happen on a dedicated server at Virtual Architechs; companies can view the survey results over a Web browser. Survey prices start at \$1,500 for a 100-person survey; volume and other discounts are available. For more information, contact Virtual Architechs in Sausalito, Calif., at 800 809-9764 or www.vtechs.com.



Phone Home

Aplio Inc. of San Bruno, Calif., wants to make long-distance dialing over the Internet as easy as dialing your next-door neighbor. If you have an Internet account, you connect a regular phone to the **Aplio/Phone Internet** telephone appliance and then connect the Aplio/Phone to a standard phone jack. The call



recipient must also have an Internet account and an Aplio/Phone appliance connected to his or her telephone. Next, you place a long-distance call to that

person over your regular phone. When the connection is made, you push a button on the Aplio/Phone and you both hang up. About 45 seconds later, your phone will ring, connecting you and the other party via the Internet. The Aplio/Phone can also be set up to answer a scheduled call from another person who has an Aplio/Phone device. Aplio/Phone 1.0 is priced at \$199 in the United States; prices may vary elsewhere. For more information, contact Aplio at 650 794-2760 or visit www.aplio.com.



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ation of a site—one that usually gets pushed into the background. Why? Good caching doesn't change the behavior of a page, only its speed of delivery. And those speed benefits become noticeable only under high traffic. So designers aren't worried about caching—and designing for it—until your Web site sees lots of traffic. Ummm, like after deployment.

Likewise, caching and dynamic pages don't mix well. But it's pretty difficult to give up the personalization and flexibility generating pages gives you. You don't want to return to those boring, static sites, either. An alternative is client-side scripting. You send JavaScript or VBScript in your HTML pages to the client for execution. This makes dynamic pages easier to cache, and you increase server per-

a result of special hardware, a dedicated Web server and highly tuned, specialized caching algorithms, these boxes are blindingly fast and can recall pages two to five times more quickly than typical Web servers. For example, the small startup CacheFlow, located in Palo Alto, Calif., recently shipped its first dedicated caching server, which the company claims increases performance speed substantially. But these utilities are currently expensive, and you'll need sizable network traffic to justify the cost.

Other entrepreneurs, however, have taken a more radical approach. They've turned caching on its head. The control in most caching schemes today lies with the requester of a page: If the page is not in the cache, it's fetched and the result is cached, or remembered, until it's re-

What if the cache could be prepopulated with pages? Then it would miss less (you hope) and respond better.

formance to boot. But you also expose the sources for your scripts to your site visitors, who can then use them on their own Web sites. And you must deal with differences in the way Netscape Communications Corp. and Microsoft Corp. evaluate browser scripts and applets.

Playing with time-to-live values and pushing scripts to the client will work. But it's easy to make mistakes that are actually counterproductive, and the payback, even when you get it right, is unpredictable. Solutions like more memory and cache with proxy servers yield good payback, are easy to get right and have global benefits on server performance and network throughput. So the most recent caching work has concentrated on these kinds of tactics rather than on making application and content authors worry about the cache.

Two interesting new developments are on the horizon: caching in hardware and push caching. Remember how a proxy server, really intended for security, can cache concentrated traffic, especially over wide area transports? Well, some entrepreneurs noticed this, too. They've started to develop specialized servers that do just this, leaving out the security aspects of the proxy server. These network utilities live to cache. As

requested again or until the requester decides to delete the page from the cache. Under these schemes, caches are filled with new pages on an as-needed basis in response to cache misses. What if the cache could be prepopulated with pages? Then it would miss less (you hope) and respond better. This is the idea behind push caches, which try to populate proxy servers or caching servers with good initial caches. The jury is still out on prefetching, since it's often difficult to predict just what pages should be in the cache.

Caching, in the end, is technology short on sex appeal but long on performance. Your network administrator will love you for it because you'll throttle back packet traffic. And your users will love you because the stuff gets to them faster. If you haven't thought about better ways to leverage caching on your intranet, now's the time to start. The payback will be immediate. The payback will be immediate. The payback will be immediate. And you only had to read that sentence once. **CIO**

Mike Carifio is president of Understanding Systems, a consulting firm concentrating on Internet applications and electronic commerce. He can be reached via e-mail at carifio@usys.com.

BROWSER

Graphic Wizardry

Graphics can be gorgeous, but they can also do an unparalleled job of gumming up downloads. Raspberry Hill Publishing Inc., a Newton, N.J.-based startup, has launched an application designed to alleviate the problem.

The **GIF Wizard** (www.gifwizard.com) is an online application that compresses Web site graphics to manageable size. Using proprietary algorithms, GIF Wizard trims down JPEG and GIF graphics in the Web browser without corrupting image quality, according to Raspberry Hill. On average, the application reduces file size by 40 percent.

The GIF Wizard SiteScan service checks out an entire Web site and automatically



creates a list of images and links that could use a bit of help. Users can select which images to fix, and GIF Wizard automatically creates more efficient versions and sends them off to the host server.

Raspberry Hill offers tiered subscriptions to GIF Wizard, including license fees ranging from \$14.95 to \$399, depending on the size of the site. For more information, call 973 579-7994.

ILLUSTRATION BY ROBIN ZINGONE



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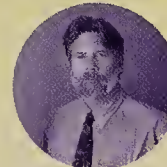
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Tim Horgan, CIO's vice president of technology and webmaster, and

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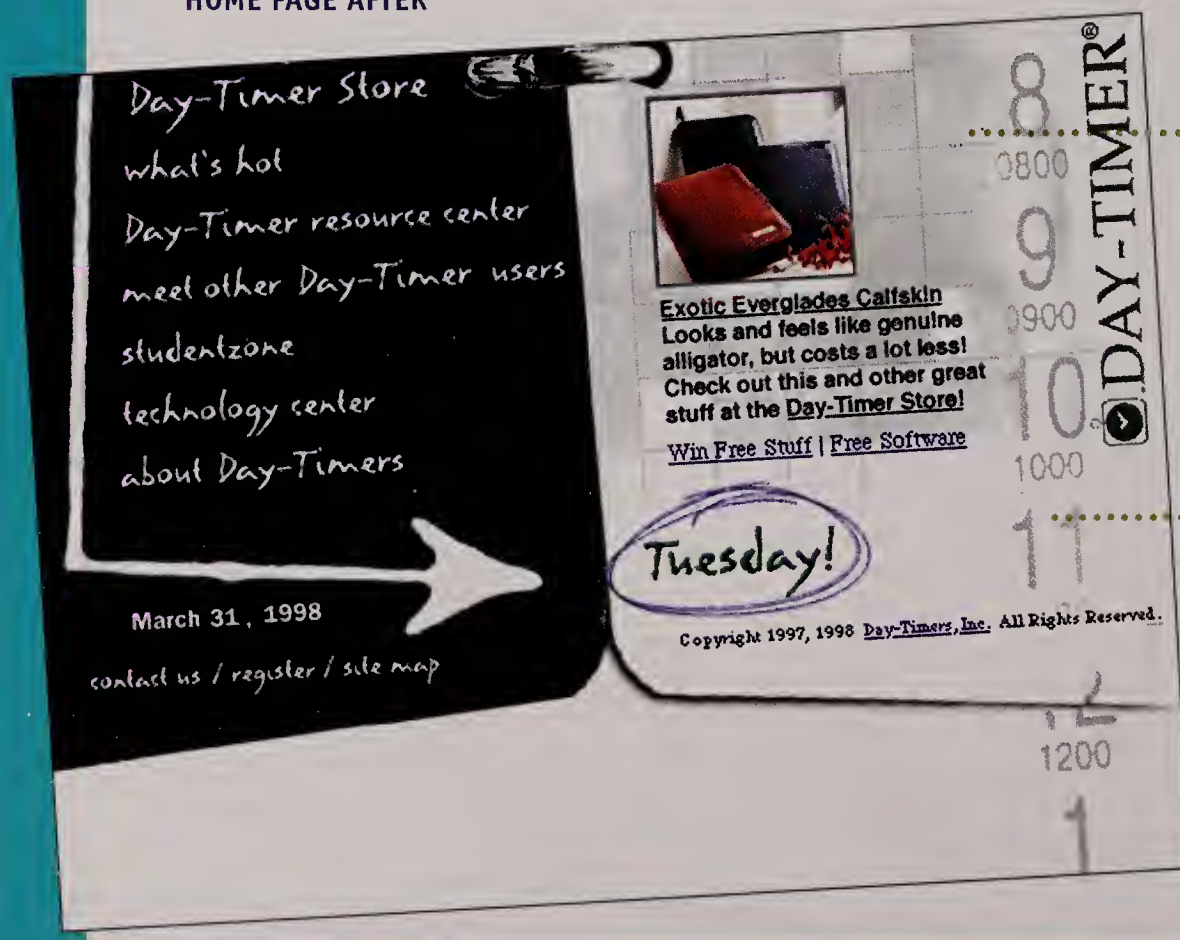
CIO

Reorganizing the Organizer

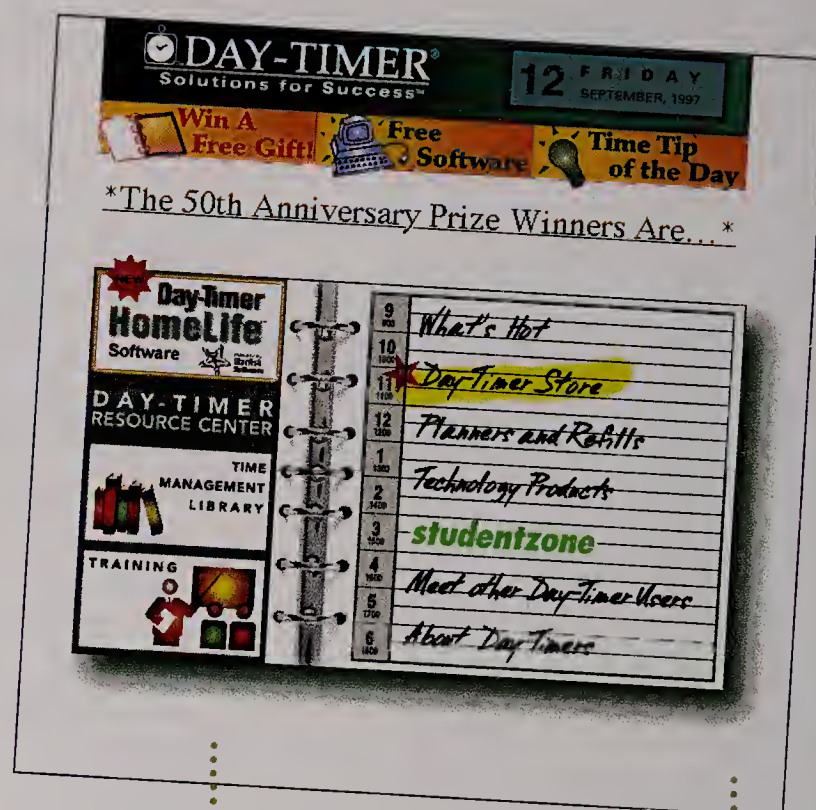
Day-Timers Inc. (www.daytimer.com) planned its Web site revamp with two business goals in mind. One was expanding its Web store to include its full line of organizers and personal productivity tools. The other was expanding its market to a younger audience. "We figured if we were going to do this anyplace, it's online," says Michael Lehman, senior Internet business manager at Day-Timers' Lincolnshire, Ill.-based parent company, ACCO Brands Inc.

For the October 1997 relaunch, much of the site's home page content remained unchanged, but Organic Inc. of San Francisco redesigned the look of the page to appeal to a younger, hipper Web crowd. Back-end database integration work done by CSC Consulting put the entire Day-Timers catalog online—700-plus products, about 500 more than on the old site. A little reorganization goes a long way. Since October, Lehman says, site visitation is up 56 percent.

HOME PAGE AFTER



HOME PAGE BEFORE



Wall-to-wall graphics and text (above) left no room for new promotions or messages. Half of the new home page (below) can easily be changed to keep site fresh.

New page features products, driving traffic to online store. Online sales have soared 74 percent.

Online store pages are dynamically generated out of an HTML database, making them easier to maintain.

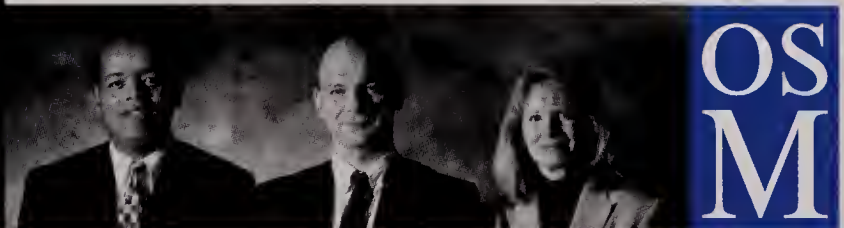
The old Day-Timers site used a paper organizer image as its main visual element. The new site offers a sleeker take on the organizer.

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